AMATEUR JUNE 1949 RADIO

IOURNAL OF THE WIRELESS INSTITUTE OF AUSTRALIA

COMPACT WITH HIGH EFFICIENCY AT H.F. OR V.H.F.



Only five inches long and 24 inches in diameter, these new Philips' valves have a power output of more than 200 watts at 100 Mc. or 300 watts at lower frequencies. These valves embody entirely new techniques and offer unequalled efficiency. Their construction minimises internal insulation. Base-pins are sealed by fusion of powdered glass. Zirconium-coated mode gives complete freedom from secondary emission. Base pins fit the standard 5-pin socket.



TRANSMITTING

VALVES



"HAM" RADIO SUPPLIERS

5A Melville Street, Hawthorn, Victoria

PHONE: HAWTHORN 4465

Outstanding Bargains at

PHONE: HAWTHORN 4465

Both here and on Page 20 we are again pleased to offer many sought-after items at astoundingly low prices. You are cordially invited to inspect our vast range of supplies at the new address—5A Melville St, Hawthorn, but if you are unable to do so, you can, with confidence, order by mail as goods are only of the finest and as described in advertisements on these pages.

BARGAINS - BARGAINS - BARGAINS

American Transceivers, Hi-Frequency I.F. Tube line up—three 7193s, seven 68H7s, three 6H6s, four Relays, Genemotor 18 volts input at 3.2 amps., output volts 450 at 60 Ma. Chockful of useful parts.

To Clear, be early £4 each.

Brand new dual Audio Units. Containing two 12A6s in grey crackle finished containers. These units offer many purposes. Pre-Amplifiers, Inter-Communication Units or for wreeking. Units are mounted on rubber stands.

SCR522 Genemotor Power Supply, input—28 volts d.c., output—300 volts d.c. and 150 volt d.c.; 13 volts filament

eurrent rating 300 Ma.

A few only

E1 each.

MCR1 Miniature Communication Receiver, works off ac.
or d.e. mains of any voltage from 95 to 250 or dry bat-

or d.c. mains of any voltage from 95 to 250 or dry Batteries. Uses five valves—osc. IT4, mixer IR5, if, amp. IT4 (1998) and IT

One only at £12.

Line Filters, 12 volts at 30 amps., inclosed in duralium

Rectifiers, Copper Oxide, 12 volt at 100 Ma.; S.P. Bridge.
Ideal for Relay operations. 2/6 each.

Command type Modulators as used with Command Transmitters. Valve line up—1625, 12J5, and VR150. Complete with genemotor.

Real Bargains at £4/10/- each.

... 10 1/ 10/ Cuci

FM ADAPTORS (Made by Kingsley). Tube line up—6SJ7, 6H6, 6J5; black crackle case, less lid and valves.

Your opportunity at 15/- each.

TRANSMITTERS.—ATS, 50 watt, Phone or C.W., crystal or V.M.O. Tabe line-up.—6 V6 osc. 807 doubler, two 807s in final. Ideal Ham rit, covering 26, 40, 80 metres. Also broadcast bond to 150 Kc. Meter for all stages; easily adapted to a.c. or d.c. power supply. Slightly damaged, secondhand

Bargains at £7 each
AMERICAN SWITCHING RELAY BOXES: Contain

good wrecking parts, co-ax connectors.

Snaps at 5/- each.

AT5 AERIAL COUPLING UNITS.

Two only at 30/- each.

Two only at 30/- each. One less meter, £1.

TRANSMITTER.—V.H.F., easily adapted for 400 Mc.
Band uses two 15Es in final. Trombone Antenna.

Few left £3 each
Switching United, American type, housed in crackle-

Switching United, American type, housed in cracklefinished case 18" x 8" x 5", contains 24 volt d.c. motor and lots of useful gear.

Only

£1 each

Philips' model TA155 Cathode Ray Oscilloscope. Valve line-up—one 902, two 5Y3s, one 884, two 6J7s. One only and a gift at £17/10/-.

One only AR12, made by R.C.A., Melbourne. Four bands 130-420 Kc., 480-980 Kc., 3.5-7.5 Mc., 7.5-16 Mc., Crystal Phasing, R.F. Gain, etc. Needs lining up, uses 6 volt valves. Complete with a.c. power supply.

As traded, a Bargain at £20

"HAM" RADIO SUPPLIERS

KEN MILLBOURN, PROP.)

5A Melville Street, Hawthorn, Victoria

(East Kew Tram Passes Corner) (Phone: Hawthorn 4465)

Special Attention Given to Country Mail Orders.

EDITOR:

T. D. HOGAN, VK3HX, Telephone: UM 1732.

MANAGING EDITOR:

J. G. MARSLAND, VK3NY.

J. C. DUNCAN, VK3VZ.

ASSISTANT TECHNICAL EDITOR: A. K. HEAD, VK3AKZ.

COMPILATION:

R. W. HIGGINBOTHAM, VK3RN.

LIAISON

I. K. SEWELL, VK3IK.

ADVERTISING REPRESENTATIVE:

W. J. LEWIS, 20 Queen St., Melbourne, C.1, Telephone: MU 5154.

PRINTERS:

"RICHMOND CHRONICLE," Shakespeare St., Richmond, E.1.

MSS. and Magazine Correspondence should be forwarded to the Editor, "Amateur Radio," Law Court Chambers, 191 Queen St., Melbourne, C.1, on or before the 8th of each month. Subscription rate in Australia is 6/- per annum, in advance (post paid) and A7/6 in all other countries.

Wireless Institute of Australia (Victorian Division) Rooms' Telephone is FJ 6997.

- IN THIS ISSUE -

Beam Rotator	3
Hints on Identifying and Tuning a S.S.S.C. Signal	4
Ionospheric Predictions for the Amateur Bands	5
A Crystal Controlled Converter	7.
Questions and Answers	8
A Simple Frequency Divider	9
Another Use for Small Rectifiers	11
W.I.A. Federal Executive Annual Report for 1949-50	12

Report for 1949-50	12	
Minutes of the Nineteenth An-		
nual Federal Convention	14	
Fifty Megacycles and Above	17	
Fodoral OSI and Divisional		

Federal, QSL, and Divisional Notes 18 Correspondence 24

AMATEUR RADIO

Published by the Wireless Institute of Australia, Law Court Chambers, 191 Queen Street,

Melbourne, C.1

EDITORIAL



I have often wondered just how many members read the Editorial each month. Every member should make it a point of reading and studying the Editorial for in practically all cases it deals with some point of Institute policy.

However in this case the Editorial does not deal with Institute policy, but one which is closely linked with Institute policy—that of Magazine policy.

I have no doubt that this month the majority of readers have looked through the Magazine first, and perhaps read it, before turning to the Editorial. They have perhaps been a little disappointed at the contents—a new reader may perhaps wonder just what it is all about.

at Just was a sa account of the control of the cont

I would have liked to increase the number of pages in this issue to cover the Convention, but with our present income from sales and advertising, this was impossible. The number of pages is governed by the advertising, and in this respect you can help improve the Magazine. You can do this by inducing prospective advertisers to take space in the Magazine—in fact acting as a self contained publicity agent.

It should be obvious to members that if more advertising is obtained, more pages can be added to the Magazine, and consequently more reading matter, either in the form of technical material or notes.

I have every hope that from the July issue members in all Divisions will receive their Magazine within a few days of the first of each month. In order to do this, the date for which all copy is due in Melbourhe, and a date which, in the future, will be strictly adhered to, has been moved forward to the 8th of each month.

This early date, I feel, will not suit every Division, but in order to achieve the object of first of the month delivery in each State, any Division which is so affected, will, I feel sure, accept the early date as a progressive step to ensure early delivery of the Magazine.

I regret that a great deal of material forwarded by Divisional Sub-Editors, Zone Correspondents, and others for this issue has had to be severely curtailed or deleted entirely.

THE EDITOR.

Homecraft

BETTER BARGAINS for the AMATEUR



VOUR OWN DE-LUXE OSCILLO-GRAPH

ststanding Value. The famous 5BP1 thode Ray Tube. Originally cost £15. mediate delivery . . . 37/6 plus S.T. ue Print as illustrated to boild De Laxe Oscillograph



Power Transformer for 5

trated 87/6 Cathode Ray Oscillograph, 99/--



WAVE CHANGER

Single Bank Oak Double Sided, 6 x 2 Switches, 2/11.

Bank 3 x 2/11 Switches . . . 2/11. 4 Bank Band-spread type 3/11.



Set Builders' Foundation Kit, bakelite cabinet, chassis, front mountained and dial assembly. As plate and dial assembly. A trated, Only 45/- complete.

RADIOGRAM CABINETS Walnut piano finish £13/19/6. Model with deep well for use with record changer—



Cosmoohord.—An English imported streamlined high fidelity pick-up, ideal for all sound applications, giving high output with exceptional quality. Arm and base is plastic moulded, and finish in black. Price 39/11.





Country and Interstate clients add 15/- packing charge.



English Collaro Electric Gramo Motors. The new AC47 Electric Motor with Pick-up and Automatic Stop. Complete, as illustrated,



netic pick-ups. When ordering advise if required for Garrard or Collaro pick-ups. Price, 45/-,



R.A.A.F. 24 Volt, 1,500 Watt, High Charging Rate Generators. Ideal for Home Lighting Plant uper Disposal bargain. Originally cost over 60. Our price only £13/15/-.



inch diam. 3/3, 6-pin 11 inch diam. 3/5.



1/11 each.



The Collaro Microgram. This instru-ment brings real life to your records. High fidelity amplifier speaker Leatherette carry ing case. Only 29





R.F. Pentode 6.3v., 9-pin lock-in socket, 16/-

COUNTRY AND INTERSTATE CLIENTS ADD FREIGHT OR POSTAGE

BARGAIN BLOCK CONDENSERS

0.5 uF. 500 Volt Working 2/6 0.02 uF, 8,000 Volt Working . . 3/11 2 uF. 800 Volt Test 3/11 1 uF. 800 Volt Test 3/11 0.25 uF. 6,000 Volt Test .. . 4/11 4 uF. 450 Volt Working 5/11 1 uF. 450 Volt Working 2/6 0.1 uF. 6,000 Volt Test 3/11

290 LONSDALE STREET, MELBOURNE Central 43 I I

The Propellor Feathering Motor as a Beam Rotator BY D. R. AVRE.* VK3KP

A number of Amateurs have obtained from Disposal sources 24-volt (d.c.) propeller feathering motors of the kind used in 3-bladed variable pitch aircraft propellers. These motors, with their associated reduction gear-box, weigh only 40 to 50 pounds.

They are readily converted to a.c. operation and develop a very large torque that is more than sufficient to turn the largest rotary beam assemblies. Many requests for conversion data have been received. The present article

is the outcome.

MODIFICATIONS Fig. 1 shows a motor (D) in its outer cover of spun aluminium sheet (R) together with the reduction gear-box (F), the mounting plate (H) and the bevel gear (J). The latter is, of course, the final drive of the unit, and meshes, in a complete pro-

peller, with gears attached to the blades. Hearsay evidence suggests that the gear-box (F) is almost full of castor oil, and that any attempt to separate the two halves of the casing is likely to make a notable mess unless precautions are taken to catch the oil. However, it should not be necessary to open up the removed in a more conventional manner by unscrewing plug (O). It is suggested that a rough check should be made to ensure that the gear-box is 40 to 50% full of oil. "Shell" household oil would be a suitable lubricant in place of castor oil if a dry gear-box is met with. There are several grease nipples on the gearbox (K is one). Medium car grease will do for these. So much for lubrication.

The following modifications are required:-

1. Removal of Stop Plug:

Unscrew stop plate (L), saw off the plug attached to its back, and replace the plate. (Reason: The plug is part of a cam-operated mechanism designed to prevent full 360 degree rotation. The rest of this mechanism, comprising mainly pivoted trip arms, can be re-moved, if desired, by taking off the bevel gear (J) and the mounting plate (H), extracting the trip pivots and, finally, removing the trip arms. This last operation involves a pretty piece of juggling, but is quite possible. Replace the mounting plate and bevel gear.)
The warning plate (N) relates to this

2. Removal of Brake, etc.:

Take off the motor cover (R) by removing three screws (one is shown at E). The magnetically operated brake assembly (B) is revealed. Unscrew the threaded ring at the end of the motor casing extension. Undo the cotterpinned nut which holds a small toothed sprocket in the composition clutch plate and remove the sprocket and its key from the motor shaft. Remove springs Finally remove entire brake assembly.

*65 Kenmare Street, North Box Hill, E.12, Victoria.

(Reason: A very considerable amount of current is necessary to operate this clutch type brake which was designed to prevent the immense torques of spinning propeller blades from rotating the motor and thus permitting unwanted variation of pitch. There is, however, little likelihood of wind pressure on beams rotating the motor through the reduction gear owing to the very high ratio [9,576 to 1] of the train. Such pressures are trifling compared with the torques developed in aircraft.)

3. Removal of Coil:

A double-layered coil of enamelled copper strip is now disclosed in coil surround (Q), the coil being connected to two terminals (C). Disconnect the coil leads from the terminals and connect a shorting link across the latter.
The coil may be left in place once it is
open-circuited, but the author prefers to rip it out on principle. Finally replace the threaded ring.

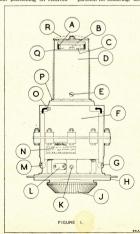
4. Suppression of Motor Interference:

Motor noise (electrical) can prevent accurate beam positioning on received signals. In some cases, this noise level is so high as to interfere with broadcast receivers in the neighborhood. Amateurs have found that shielding the leads to the motor and grounding its frame have not materially reduced the

W3GHD is responsible, says "QST for devising the following cure. (Although it is necessary to remove the motor (D) from the gear-box (F), it is not necessary to remove the entire mechanism from an existing installa-

With the cover (R) removed, loosen the threaded ring (P) which clamps the motor to the gear-box. Support the motor with one hand before disengaging the last few threads. A straight axial

Looking at the drive end of the motor six brass-surfaced brush holders will be noticed (numbered 1 to 6 in Fig. 2) symmetrically arranged about the motor shaft and its gear. Clean the tops of these brush-holders carefully in preparation for soldering. Midway between



brushes 2 and 3, 4 and 5, 6 and 1, counting around the circle from any point, drill three holes through the side of the motor and tap them for a Whit-worth or similar screws. Insert the screws with the heads inside, and with shake-proof washer and a double solder lug under each.

Procure six midget mica condensers of from 0.002 to 0.01 uF. capacitance (the larger the value, the better) and solder them in as shown in Fig. 2, where they are marked X, to by-pass each brush-holder to ground. File the screws flush with the motor case, and reassemble the motor to the gear box.

POWER SUPPLY Four wires AND SWITCHING come out of the pass down tubes to terminals, two of which are shown at (G) and (M) in Fig. 1. The other two, not shown, are close together at the back. The wires end in lugs at these points. The lugs are screwed to connectors which pass through the case and, via spring-loaded switches operated by the cam mentioned earlier, connect to four sunken spring contacts in tubes slightly raised from

the face of mounting plate (H). Only three of the four leads are needed, namely, that marked (G) and the two at the back. It is a matter of con-venience at what point in the lead or connectors the connections are made to the supply cables. (G) is the common connection, while of the two close together at the back, one and common

connection (G) give clockwise rotation, and the other in conjunction with (G) gives anti-clockwise rotation.

Thus, three leads to the motor combined with a single-pole double-throw switch represents the sum total of equipment necessary to control the motor.

Very little power is needed to turn the motor. A transformer delivering 20 volts on load from an 18 gauge s.w.g. winding did not get appreciably warm after ten minutes continuous running, which is probably much longer than



thanks.

DAA

most Amateurs would rotate a beam at any given time. At this voltage, the bevel gear speed was slightly under r.p.m. It is suggested that the motor be run at from 25 to 30 volts. It should then be possible to achieve 1 r.p.m., which is satisfactory for most beams.

MECHANICAL The unit is read-INSTALLATION ily mounted in any position by means of plate (H), which is drilled for

Drive take-off from the bevel gear is best left to the ingenuity of the user; various methods can be devised accord-

ing to the material on hand.

A small hole, say 4" diam., should be drilled in the centre of the top of the cover (R) to allow any condensed moisture to drain out when the motor is in use (i.e., with bevel gear upwards).

ACKNOWLEDGMENTS

The author makes few claims for originality in this article. It is more in the nature of an attempt to bring together in one place a number of ideas and facts originating in various quartore Much credit is due to articles in 'QST," particularly that on the suppres-"QST," particularly that on the suppres-sion of noise generated by these motors ("QST" Nov. '48, p. 65), part of which is reproduced verbatim. VK3XS (R. R. Prowse), VK3VO (R. J. Clark), and VK3VZ (J. C. Duncan) were responsible for considerable helpful information, and to them the author extends his

Hints on Identifying and Tuning a S.S.S.C. Signal BY LEN EDWARDS,* VK7LE

Now that Single Sideband Suppressed Carrier (s.s.s.c. for short) transmissions have been authorised by the P.M.G's. Dept., a few remarks on how to recog nise and tune in such a signal should not be out of place.

If you ever hear what sounds like a very bad case of splatter without a carrier which kicks up the S meter and is tunable over a narrow section of the band, the chances are that it's not the fellow a few blocks away modulating 150%, but a single sideband signal. If this proves to be the case, then the next thing to do is to centre the signal in the receiver pass-band and leave the main tuning control set in that position. If you possess a frequency meter, v.f.o. or some other source of local carrier, turn it on and tune across the s.s.c. signal VERY carefully until the s.s.s.c. signal sounds like a normal phone trans-

mission. When this point is reached, the signal should jump out of the noise, etc., in a very surprising manner. If the local carrier source is reasonably stable it should not be necessary for any further adjustment except perhaps to experiment with the amount of coupling from the local oscillator into the receiver. The optimum coupling position, howseems to be quite broad-too ever. much carrier giving the effect of a sig-nal with low modulation, and too little coupling giving an overmodulation effect, with distortion and the inability to entirely clear up the inverted speech effect. * Strickland Avenue, Hobart, Tasmania.

The chances are that there will not be enough carrier injected into the receiver, because although the signal itself may sound weak, it has quite a high peak power and a relatively large amount of local carrier is needed to prevent any overmodulation effect. For instance, if the average radiated power of the sideband signal is 50 watts, then the equivalent carrier power for this amount of sideband is approximately 8

times greater or about 400 watts! Another method of supplying a local carrier for the single sideband signal is to use the receiver b.f.o. With this method the technique is somewhat different and because of the varying nature of the signal, and there being no carrier to operate the a.v.c. and hold the gain down, it may be necessary to switch off the a.v.c. and turn the manual r.f. or i.f. gain down so that the receiver will not be overloaded anywhere. When this is done, turn up the audio gain and switch on the b.f.o.

Now VERY CAREFULLY tune the b.f.o. until the signal becomes intelligible. On either side of the correct position the speech will sound inverted and high pitched or low pitched, but when right on the nose it should sound just like any other signal. Don't make the mistake of trying to zero beat anything because there's nothing to zero beat if the carrier has been completely suppressed at the transmitter-just tune the local oscillator for clear speech. A little care is needed to get the exact frequency because the local oscillator should be adjusted to within ± 50 cycles

of the original suppressed carrier frequency.

Maybe all this sounds quite complicated and tricky, but in practice the fall into place quite easily. Anyway the little bit of extra care in tuning is well rewarded. Tests so far have shown a large reduction in QRM and QRN when using s.s.s.c. and these days a contact which is free of both these troubles is quite a rare thing.

Summarising briefly, the tuning process for receiving a single sideband signal is as follows:-

If using a separate oscillator, v.f.o., Frequency Meter, etc.:-

(1) Tune in the s.s.s.c. signal in the

usual way. (2) Switch on the v.f.o. or Frequency Meter and carefully tune it across

the signal until the speech be-comes intelligible. Do not try to zero beat anything-tune only for clear speech. (3) Turn the audio down-you'll

wake the baby! If using the Receiver B.F.O .:-(1) Tune in the s.s.s.c. signal.

(2) Turn off the a.v.c., run back the

i.f. or r.f. gain and turn up the audio control.

(3) Switch on the b.f.o. and carefully tune it across the signal until clear speech is obtained.

The first method using a v.f.o. or frequency meter is probably the most satisfactory, as it has a blanket effect on the receiver, thus giving a better QRM

and noise reduction.

IONOSPHERIC PREDICTIONS FOR THE AMATEUR BANDS

JUNE, 1949

The accompanying charts have been prepared by the Ionospheric Prediction Service of the Commonwealth Observatory. The first set of the series was published in the November, 1948, issue of this magazine, together with an article explaining the nature of the forecasts and how to use them. Nine of the charts, prefixed by the letter "C" for Canberra, refer to forecasts for the South-Eastern Australian States. The remainder, prefixed by the letter "P" for Perth, are for Western Australia.

Conherra charts refer to the

follov	wing world zones:-	. Teres to
Zone	Region	Terminal
1	Western Europe	London
2	Maditarranaan	Cairo

N.-West America N.-East America San Francisco New York Central America Barbados South Africa Johannesburg Far East Manila

The forecasts have actually been prepared for point-to-point circuits between Canberra and the overseas terminals mentioned in the above table. It is, however, to be expected that the charts will provide an approximate indication of ionospheric conditions for all Amateur contacts from South-Eastern Australia to the various world zones.

The Perth charts are similar to those based on Canberra, except that the Far East terminal is Shanghai in chart P-Z6. No forecasts are given from Perth to Zones Z2 and Z4 for the current month. Chart P-Z2 would be essentially similar to P-Z1, while chart P-Z4 might unreliable due to auroral activity in high northern latitudes.

USE OF CHARTS

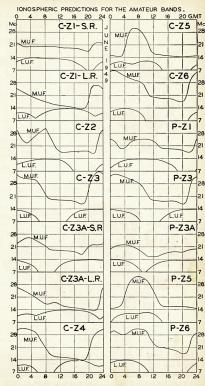
All that is necessary in using the charts is to select a time (G.M.T.) during which a specified Amateur band frequency is below the maximum usable frequency (M.U.F.) of the F region of the ionosphere but above the lowest useful frequency (L.U.F.) for the de-sired contact. In two cases, Zones 1 and 3a, it is necessary to consult both the short-route (S.R.) chart and the following long-route (L.R.) chart.

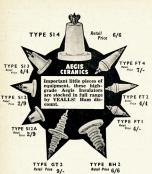
OUIZ

The Prediction Service welcomes comments on the accuracy of its predictions. In particular, answers to the following questions on the Canberra-Johannesburg circuit would be useful:-

- Were conditions good on 7 Mc. from 14 hours to 22 hours G.M.T.? 2. What were conditions like on 14
- Mc. for the period 12-24-04 hours G.M.T.?
- Was communication possible on 28
 Mc. for a short period around 0600
 hours G.M.T.? Answers to the Quiz should be sent to the W.I.A. and should, if possible,

refer to consistent results obtained on the majority of days in the month. "Amateur Radio," June, 1949





VEALLS for all HAM REQUIREMENTS . . .



LEXINGTON PICK-UPS
This English Moving Coil Pick-Up gives full reproduction of the total
audio frequency range. Complete with transformer screening box and
sapphire needle. Attractively priced at:— 12 in. £11/8/10; 16 in.
£12/10/10.

"TECNICO" LOW-PRESSURE PICK-UPS
Model FL 48. Replaceable needle pick-up for general use, \$5/4/Mödel FP 8. Crystal pick-up with built-in sapphire stylus, \$6/9/JUNE "SNAPS" AT VEALLS:—

B.A.1 Sapphire Play-back Needles, give 2,000 playings 9/9 each. BLANK DISCS available! 10 in. 6/6; 12 in. 8/6; Ham discount! UNIVERSITY TEST EQUIPMENT. Full range available, including O.K.1 Oscillator Kit Set—48 (plus tax).

Oscillator Rit Set—88 (plus tax).

AND REMEMBER VEALLS' QUICK CHASSIS CUTTING SERVICE!
Chassis for any circuits or special needs cut promptly and efficiently
to suit you!

WEAL

299 CHAPEL STREET, NELBOURNE. FJ 3145.
299 CHAPEL STREET, PRAHRAN. LA 1605.
MAIL ORDERS—BOX 2141T, G.P.O., MELBOURNE.
Associated with Arthur J. Veall Pty. Ltd., Established 1911.



1 LITTLE GREY STREET, ST. KILDA, MELB., VIC.

Phone: LA 3657

"Amateur Radio," June, 1949

A Crystal Controlled Converter

BY DR. LEO H. McMAHON.* VK2AC

The first thing an Amateur acquires are self-made and from humble beginnings grow in size and complexity. Branches in turn produce b.f.o., noise limiter, S meter, separate a.v.c. systems, function with varying degrees of success and produce satisfaction, disappointment, and disgust accordingly. Periodicals are scanned and great is the chagrin when one sees that overseas commercially-built receivers can be had for so many unattainable dollars, and are also beyond the purse of the greater percentage of Amateurs.

In the production of a home-made receiver, many factors come into play. The most important is the mechanical ability of the maker. This varies from those who really are good, to those whose ability is not far from a negative quantity. Consequently many receivers can be handled only by one person who knows just where, and how, much pressure to exert to bring a station back to where it was three minutes previously.

Two very important failings in a receiver are connected with the mechanics: these are instability and a.c. modulation of the high frequency oscillator. A great many receivers suffer from this last trouble and it is difficult to eradi-The trend in modern sets is for double conversion, or even triple conversion with the addition of a Q5er.

The Collins 75A receiver has the cure all for the two faults mentioned, that is crystal control of the higher frequency oscillator, and tuning of the second or low frequency oscillator. This gives the man with limited mechanical ability the opportunity to build a satisfactory receiver, as almost everybody can build a stable low frequency oscillator.

To make the application of the above mentioned principle easier, articles have recently appeared in "QST" for Novem-ber 1947, October and November 1948, showing how to make crystals oscillate on their third harmonic. This circuit is the same as shown in the schematic and was described in October 1948

When one reads an article on how to build some piece of equipment, you are confronted with not only the mechanical difficulties, but the trouble of not being able to duplicate the parts prescribed; as if you haven't enough trouble making it go anyway. So this article has been written to show the results obtained on locally made and easily attainable parts.

Four of these oscillators have been made up using odds and ends. The one used in the writer's converter at present is for tuning both the 7 and 14 Mc. bands, as these are the two used by most Amateurs. Previously a triode oscillator was used with a plate tickler, this turned out to be very handy, as it needed no change in the coil whatsoever, but just the re-arrangement of a

* 532 Harbourne Rd., Kingsford, Sydney.

This application of a crystal operating at its harmonic frequen-

cies deserves careful consideration. With broad band r.f. stages in general use, a Converter using the crystal operating on one of its harmonics, as outlined in this article, looks a most interesting possibility, and by using the standard receiver as the second i.f., the image rejection and stability should be exceptional.

The crystal used is 3540 Kc. This oscillates at 10.6 Mc. approximately. The crystal does not oscillate at exactly three times its fundamental, however, and it has not been measured exactly as yet. To tune the 14 Mc. band, the first i.f. covers the range 3.4 to 3.7 Mc. with the oscillator on the low frequency side of the signal. This as is easily seen, also does the 7 Mc, band in which case the oscillator is on the high frequency side.

The Converter uses a 954 r.f., 6AC7 mixer, and a 9002 oscillator. The reason these tubes were used is that the conpreviously covered all bands verter previously covered an bands from 40 to 6 metres, with plug-in coils. Don't try to make it work on 80 metres with a 3 Mc. first if., for it will "take off." The front end can be to your own liking, that is the r.f. and mixer The oscillator tube used here is a 9002, only



writer's converter:-

R1-20,000 ohms. R2-5,000-50,000 ohms. C1-0.01 uF. Simplex (S.M.) C2-3-30 pF. trimmer.

C3—Very small capacity. L1—12 turns of 18 gauge enamel, close

wound L2—6 turns of 22 gauge enamel, spaced i from L1.

Coil wound on 807 base. Crystal (fundamental 3540 Kc.) output 10.6 Mc. approx. Valve: 6J5, 9002, half of 6SN7GT or half 6J6. These valves have been tried and are known to work.

Value of components from "QST" of October 1948:-R1-3,300 ohms.

R1=3,300 ohms.
R2=4,700 ohms.
C1=470 pF.
C2=15 pF. variable.
L1, L2=varied with crystal frequency.
Valve—Half of 6J6.

because one was acquired in my travels. A very satisfactory tube is a 6J5, either glass or metal. This tube works quite satisfactorily up to 25 Mc. So you can see that there is no need to worry over

tube types The condensers used are as follows: C1, in my case, is a 0.01 uF. mica (Simplex S.M.). They tell me S.M. does not stand for silver mica. C2 is an ordinary trimmer that covers from ordinary trimmer that covers from about 3-30 pF. VK2ABB used a 6J5 with a Philips' concentric trimmer; with a Philips' concentric trimmer; mine is a small compression type which is readily available. The brand is not known, but it is about the same colour as an 807 base. VK2ABC used an old disposals variable. A ceramic mica was used in the other oscillator, so you can see there has been some variation. Watch it for breakdown, however, it has 200 volts across it.

For the oscillator in the receiver we have used 20,000 ohms as grid resistor and a load resistor of 5,000 to 50,000 ohms. With a grid resistor of 3,000 ohms the crystal current lights a 6 v. 150 Ma. bulb to about third brilliance and did

that crystal get hot!!

In the case of the crystal oscillating on 10.6 Mc. the coil was wound on an 807 base. L1, or the part across the two condensers, consists of 12 turns of 18 gauge enamel wire, close wound. L2 or the regenerative coil, consists of six turns of 22 gauge enamel wire. This is spaced \(\frac{1}{2} \)" from L1. As was stated before, this being just the unaltered coil out of my old plate tickler converter.

The secret of the coil is to have L1. C1 and C2 tune to the frequency you want the crystal to oscillate on, and L2 just large enough to make the crystal oscillate, but not large enough to let the whole thing take off as an ultraaudron, using the capacity of the holder, pins and leads. Quite a few crystals have been used, all disposals types. Only one wouldn't work. Maybe if we had cleaned it, it would have gone for

Tubes tried were 9002, 6J5, 6SN7GT, 6J6, so take your pick. The 6J5 is a good one, and the resistors are quite standard low wattage types.

In my case grid injection is used, whereas VK2ABB used cathode injection. We have no means of determining injection voltage, but both found the conversion was better when some capacity coupling was used. In my case two 3540 Kc. crystals were on hand. One oscillated very well and gave a grid current of 0.2 Ma., which climbed to 0.5 Ma. after half an hour and stayed steady at that value. The holder did not get hot. This crystal did not give as good a conversion gain as the other one. which gave only a constant one twentyfifth milliamp. of grid current. With this oscillator mechanical skill

is not of such consequence, and you know you are not hiding the fact that your oscillator is pulling by ganging your condenses In my case I have no spurious signals on 20 or 40 metres. VK2ABB has one

(Continued on Page 8)

OUESTIONS AND ANSWERS

In a letter recently received by the Editor giving comments on, and suggestions for, the magazine (how long since YOU wrote such a letter?), a few thoughts were given on this column. It was suggested that the question should always be reprinted with the answer, to save having to dig back through pre-vious issues to find out what it's all about. That's a good point, so be it in the future

It was also suggested that some may be shy to have their name appear, advertising the fact that there is at least one thing they don't know. The other side of this point has been found out by some who have had questions published, that they get a lot of information personally at Institute meetings, over the

Low Drift Crystals

AMATEUR BANDS

ACCURACY 0.02% OF STATED FREQUENCY

3.5 Mc. and 7 Mc. Unmounted £2 0 Mounted £2 10 0

12.5 and 14 Mc. Fundamental Crystals, "Low Drift," Mounted only, £5,

Spot Frequency Crystals Prices on Application.

Regrinds ... £1 0 0 THESE PRICES DO NOT

INCLUDE SALES TAX.

MAXWELL HOWDEN

15 CLAREMONT CRES., CANTERBURY, E.7, VICTORIA

air, etc., once it is known that they have a problem. Since there are two sides to this, you can take your choice when you send in a question, to have it published anonymously or over your name.

Another point the same writer made was that the column should be expanded. Now although that's a very nice thought, thank you, the size of this column is not in our control. If no one has a question to ask then that's that, no column. Likewise if no one has any answers to give, for it is impossible for us to run an enquiry service, answering the questions ourselves. Of course we do if we can, but in the main the an-swers have to come from YOU. As you may have noticed, business has been pretty slack these last couple of months but, with winter coming round, people's troubles should be on the increase. So send them in to Q. & A., "Amateur Radio," W.I.A., 191 Queen St., Melbourne, C.1, Victoria.

Q.10.—From VK3KP: In his article "Series Phased Aerial Arrays" ("A.R." May 1948) the late H. K. Love suggested using twin ribbon feeder for radiators and quarter wave phasing lines of such aerials. How would the velocity factors for this type of feeder (e.g. 0.77 for the 300 ohm type) affect the physical length of:-

(a) The Radiators. (b) The Phasing Lines?

A.10.-At a recent Victorian Division meeting, 3KP's question was discussed as to what effect using twin ribbon feeder would have on the physical dimensions of a Series Phased Array. 3BM presented the only practical ex-perience, stating that he had made up such an array using 300 ohm feeder for radiators and phasing lines. The dimen-sions had ALL been made 0.77 of the corresponding free space dimension and it was found to draw best at the frequency it had been cut for.

This was contested by some of the theoretical boys whose points were roughly thus: When the twin lead is acting as a feeder, either resonant or not, or as a phasing line (which is the same difference), the currents in the two wires are 180° out of phase and the field produced is mainly in the space between the wires, just where the plastic is. So the plastic has a large effect causing a wavelength along the feeder to be only 77% of the free space wavelength

But when a length of twin lead is acting as a radiator, the currents both wires are in phase and the field is being radiated into space. And since the plastic insulation forms only a small part of all space, the aerial should be cut a full half-wave just as an ordinary half-wave radiator is cut a full halfwave whether bare or insulated wire

One point everyone agrees on is that phasing lines between radiators should be reduced by the velocity factor. This means that the elements are closer than quarter-wave spacing which may change such things as gain and front-to-back ratio. But as for the element length, you can take your choice.

Q.11.—Can anyone give VK3RN in-formation on disposals gear labelled

R-9-A/APN-4; such as frequencies of the i.f. strip and what the whole thing does

A.11.-From VK3UO: Basically it is an airborne device for measuring time differences between reception of pulses from ground Loran stations. It consists of two basic units, one the receiver power supply unit identified as R9/APN4, and the indicator, counter unit identified as ID6/APN4.

The power supply requires 80 or 115 volts 400 c/s., and 260 volts (regulated by three 6A3's and a 6J7-VR150) as well as 2,600 volts for the c.r.o., becomes available. This unit is portion of the receiver chassis. The receiver itself is usually slug tuned to 1950 Kc. and is liberally supplied with 1050 Kc, wave traps in the input circuits. In actual fact the receiver will tune 1.6 to 3.3 Mc. and also 7.5 to 11.7 Mc., depending on the channel selector setting. The receiver is a standard superhet using one r.f., three i.f., and a second detector I.F. frequency is 1050 Kc. The gain of the last i.f. tube is varied by another tube in the indicator unit operated through P1 connector, yellow.

The ID6/APN4 indicator is a simple c.r.o., but with counter and multi-vibrator circuits operated from a 100 Kc. crystal added. The transformers labelled T302 1-4 are not i.f. trans-formers but are merely iron cored transformers which transfer the counters' charging pulses to the triode which tallies them before applying them to the c.r.o. time base.

The most useful part of the whole box and dice from the Ham point of view seems to be the power supply and receiver chassis, utilising all the remainder except the 6H6, V302-8, and the c.r.o. tube for spare parts. The c.r.o. mounting and 6H6 leveller could then, with mods, on the detector circuits be built into a standard c.r.o.

Crystal Controlled Converter (Continued from Page 7)

on 29 Mc., using a 17 Mc. crystal. The matter of spurious responses was dealt with in "A.R." for March, and was that the truth! However the improvement is well worth the little trouble to get this oscillator going. The output coil used in the plate of the mixer is a standard aerial coil from a b.c. set. It is iron cored and with no condenser, other than stray capacity, and can be peaked at about 3.5 Mc. It is broad enough to suit both 7 and 14 Mc., and connects to the aerial on the receiver, used as

the second i.f.
This article is detailed to help others who may wish to try the idea, and to show the simplicity of the subject. It is a step in the right direction and the writer strongly advises everyone to

Acknowledgments are due to VK2ABB who built the first converter for 10 metres. VK2ABC who built a two tube transmitter for six metres, and to VK2VW who provided some parts and

also built a 6 metre transmitter also built a 6 metre transmitter.
References: "QSZ" Nov. 1947, Oct.
and Nov. 1948, also Dec. 1948 which
includes a converter on these lines.
"Short Wave Magazine" Feb. 1949 also
has a crystal controlled converter

described.

A SIMPLE FREQUENCY DIVIDER

BY J. DUNCAN,* VK3VZ

One of the most useful pieces of equipment in the Writer's shack is this Frequency Divider. It was originally built in very "haywire" fashion for calibrating a receiver, but so much use was found for it, that it was decided to re-build it in permanent form. Some of its uses are: to check band edges. calibrate alignment oscillators, receivers, v.f.o's. and frequency meters, and for any other purpose where a series of 1,000, 100 and 10 Kc. points are required throughout the spectrum.

Reference to the schem-CIRCUIT atic diagram will show the main features of the unit which, basic-ally, consists of a 1,000 Kc. oscillator, either crystal or "Clapp" followed by two multivibrators of 100 Kc. and 10 Kc. Output is taken from a Class A isolator stage which prevents output loading from effecting the frequency of the oscillator.

Referring first to the oscillator circuit, it is strongly advised that a 1,000 Kc. crystal be used, if obtainable, but failing that, the "Clapp" circuit shown will do quite an excellent job, and after sufficient warm up will remain in zero beat with WWV on its 15th harmonic on 15 Mc. for long periods of time. Obviously this unit can be no better than the 1,000 Kc. oscillator, and time and care taken in its adjustment will be well repaid.

The crystal oscillator circuit is quite standard for circuits of this type. Slight variation of the crystal frequency is obtained by the condenser across the

crystal, C6, The "Clapp" oscillator circuit shown in the diagram varies from the usual circuit in several respects. It will be circuit in several respects. It will be noted that there is no grid condenser, the fixed capacities, and tuning conden-ser serving in this regard. Greater stability was obtained by eliminating this condenser (shown dotted), as it enables the 0.001 uF. condenser between cathode and grid to swamp the interelectrode capacity more effectively. In the original circuit this 0.001 uF. condenser and the grid condenser were in series, and therefore the maximum capacity across the cathode-grid tube elements could be no greater than the

The inductance L1 is an "Aegis M19" progressively wound aerial coil with the progressively wound aerial coll with the primary winding removed. This coil has about the best "Q" for its size, but would not be as effective as a single layer coil of much larger diameter wound on a ceramic former. In the writer's case insufficient space was available to use a large coil, so the M19 was chosen as having the best "Q" for its physical size.

smallest of these two capacities, which is usually 100 pF.

he condensers necessary to tune this inductance to 1,000 Kc. are shown on the diagram and in the parts' list. The three-plate midget, CI, has a good quality planetary reduction drive fitted, and

* Technical Editor, 23 Parkside Ave., Balwyn, Victoria.

is used to obtain exact zero beat, the 3-30 pF, air trimmer being used to bring the zero beat point to the centre of the scale on this small condenser, and once set does not need re-adjustment.

C3 is a zero co-efficient condenser supplying the bulk of the fixed capacity required, whilst C5 and C4 constitute the required negative co-efficient cap-acity for temperature correction. The negative co-efficient Ceramicon used was the smallest size the writer had on hand, and as its value caused overcompensation, a small variable trimmer was placed in series to reduce its effect on the circuit, and enabled exact compensation to be obtained. It is important that this condenser have a low minimum capacity, as the condenser will be almost out of mesh for correct compensation.

The output circuit of the oscillator also varies from the usually accepted versions of the "Clapp." When first tried, a triode oscillator was used and output was taken from the junction of the cathode and grid condensers, and fed to the grid circuit of the isolator. It was found that the frequency of the cscillator would vary when the output attenuator and loading were changed. To try and avoid the extra complications of an additional isolator stage, experi-ments were carried out, using the screen as the oscillator plate and taking output from the plate circuit. Although this method has not been recommended, excellent results were obtained and careful checks showed no detectable difference in the stability of the oscillator. In addition, changes in the isolator output circuit now had no effect whatsoever on the oscillator frequency. The frequency of the oscillator does

show some change with change of plate

voltage, and it is advisable to feed the oscillator from a regulated supply.

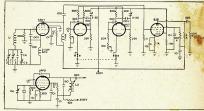
The 100 and 10 Kc. multi-vibrators

are quite standard, input and output being through the 3-30 pF. trimmers. The tocking frequencies of these oscillators being adjusted by the variable resistors in their grid circuits. A two pole three position switch is located on the front panel, and is arranged so that in position 1, only the 1,000 Kc. oscillator is working; position 2, 1,000 Kc. oscillator and 100 Kc. multi-vibrator; and in position 3, 1,000 Kc. oscillator, 100, and 10 Kc. multi-vibrators are all operating.

When tuning a receiver with the unit vorking, it will be found that the 1,000 Kc. points will be loudest, then the 100 Kc. points, and finally the 10 Kc. points slightly weaker again, thereby helping to identify them. It is essential to in-corporate a h.t. switch as an aid in identifying the signals if the antenna is left on the receiver.

Referring again to the diagram, the isolator stage uses a 6J8G, the grid re-ceiving the output of the 1,000 Kc. oscillator, and the normal oscillator grid the output of the two multi-vibrators A 6L7 could be used in this position, with the injector grid used to take the multi-vibrators' output. It is important used, as otherwise switching in the multi-vibrators will effect the frequency of the 1,000 Kc. oscillator, which must be avoided at all costs.

CONSTRUCTION The construction and layout of this unit can well be left to the individual, and provided all components in the oscillator circuit are rigidly mounted, no trouble should be experienced. In the



The diagram shows the "Clapp" 1,000 Kc. oscillator feeding the 6J8G isolator with the 100 and 10 Kc. multi-vibrators feeding into the oscillator grid, alternative 1,000 Kc. crystal circuit is shown underneath the main diagram.

C1. C6-Three plate midgets, with good bearings.

C2—3-30 Philips air trimmer. C3—100pF. NPO Ducon Ceramicon. C4—20 pF. N750 Ducon Ceramicon (negative comp.).

C5-10 pF. air trimmer of low minimum capacity.

L1-M19 Aegis aerial coil (see text). L2-Iron cored broadcast coil.

"Amateur Radio," June, 1949

writer's unit the zero set dial is located in the centre of the panel, with the rotary switch for 1,000, 100, and 10 Kc. output underneath. The ht. switch located to the right, and the output terminal to the left of this switch. No output attenuator was incorporated, but is suggested as an improvement on the

original.

The chassis used was rather small, and it is hoped to re-build the unit on a larger chassis at a later date, and incorporate a power supply, and a wide range audio oscillator, so that the frequent of the control of the c

ADJUSTMENT The first step in adjusted the 1,000 Kc. oscillator on frequency. The output switch should be set to the 1,000 Kc. position, so that neither multi-vibrator is operating. A broadcast receiver in which the dial is calibrated in kilocycles, and in which the stations it is very handy in setting up the oscillator.

Commence of the control of the contr

Turn on the beat oscillator of the receiver and tune in the 5 Mc, or any other 1,000 Kc, harmonic. Switch the to the 100 Kc, battonic Switch the to the 100 Kc, bostlion, and count the number of beats between any two adjacent 1,000 Kc, points. If there are more or less than nine, tune to one of sistor in the grid circuit of the multivibrator. The beat you are listening to will suddenly disappear. Again count the number of intermediate points, and the number of other disappears and the number of the point of the point of the point of the number of the point of the number of the number

The next step is to adjust the 10 Kc. multi-vibrator, which requires more care. Set the receiver on one of the 100 Kc. points and switch on the 10 Kc. Kc. points and switch on the 10 Kc. disappears, reduce the 3-30 trimmer in the output of this multi-vibrator. What has happened is that the extra capacity and loading of the 10 Kc. multi-vibrator and loading of the 10 Kc. multi-vibrator step with our 1,000 Kc. fundamental. Reducing the capacity mentioned will

correct this condition.

With the receiver zero beat on one of the loff Kr. points. It is most probable of the loff Kr. points. It is most probable resistor in the grid circuit of the 10 Kr. multi-vibrator should now be turned, the loff Kr. multi-vibrator should now be turned to or the points where no audible signals will be heard. Leave the resistance set to one of these and tune the condition of the loff kr. multi-vibrator should be considered to the loff beat notes between adjacent 100 Kr. points. If there are not nine, reset the resistor to another point of silence as receiver zero beat to 2 at 700 Kr.

point, and again count the number of intermediate points, repeating the procedure until the correct number are obtained. If it is not possible to get the correct number within the range of the variable resistance, the fixed resistor in series must be altered above or below its present value as necessary.

If the method described above is followed carefully, no trouble will be had in setting up the 10 Kc. multi-brator. The writer had considered difficulty in picking the correct point on the control of the correct point on the correct point point

After the correct point has been obtained, throw the output switch to its three positions, and make a final check to see everything is in order. Listening carefully to the output with a pair of phones, it is possible to hear the 10,000 cycle note.

Attention is now turned back to the 1,000 Kc. oscillator, and temperature compensation carried out as follows.

TEMPERATURE In carrying out is essential that a very close indication to temperature compensation it is essential that a very close indication writer's case the communication receiver has an "R" meter, and is also capable of covering the broadcast band of 10 Kc, and with the Frequency Divider switched to 10 Kc, and the output adjusted so that the signal level put adjusted so that the signal level put adjusted so that the signal level are approximately equal, when compared to the signal seven will begin to pulse, the pulses ceasing will be seen that the signal seven will begin to pulse, the pulses ceasing enables a much more accurate indication of zero beat to be obtained than in possible by ear, down to a few cycles

After allowing about 15 minutes for the oscillator to warm up, set to zero beat with the broadcast station. After a while the "R" meter will begin to pulse at a gradually increasing rate, so bring back to zero beat with the zero set control, noting whether the condenser had to be increased or decreased in capacity. If the capacity had to be decreased, the circuit is under-compen-sated, if it had to be increased the circuit is over-compensated. Assuming is under-compensated, increase the value of C5 slightly, then reset the zero beat position on the main dial to centre with C2. Repeat the procedure until the "R" meter shows a slow pulse for two or more hours, when correct com-

pensation is indicated.

It is remarkable how simple temperature compensation, such as this, will change an oscillator which drifts badly, to one which is highly stable judged by

any standards, and must be carried out to be appreciated. The Frequency Divider should be shielded in a metal case to reduce un-

wanted pick-up, and will be found a very useful piece of equipment to have in the shack, output being sufficient up to 54 Mc.

If it is desired to have outputs above

his frequency, it is only necessary to connect a simple coll-condenser circuit between the output terminal, tuned to the frequency desired.

THE 1949 A.R.R.L. HANDBOOK

We take pride in announcing the publication of the 1949 edition of the "Radio Amateur's Handbook"—the Twenty-Sixth Edition of the Internationally recognised standard manual of Amateur Radio Communications.

Hadio Communications.

The chapter on high-frequency receivers incorporates up-to-the-minute
information in single side-band telephony receiving techniques and a wide
variety or new constructional material,
variety or new constructional material,
variety or new constructional material,
receiver, an improved audio noise limiter,
selective if, amplifiers, band-switching
pre-selectors, crystal controlled converters, and n.b.f.m. adapters.

The high-frequency transmitter section contains a wealth of practical introduction of the control of the contro

A handy new section on practical filter design is included in the power little design is included in the power little design included in the power little arranged for maximu mreadability. The Handbook lade contains, in the usual fully-illustrated and ably-presented in the contains of the contains of the contains and the contain

The wide field of Amsteur very-highfrequency, ultra-high-frequency and microwave techniques and equipment handbook section, with constructional data interestingly written and illustrated. The Handbook moreover is intion on assembling an Amsteur Station, climinating broadcast and television interference, recommended station operamensage handling enercy operation and message handling enercy operation and

Numerous charts, graphs and miscellaneous data are grouped for easy reference and utility. The practical vacuum tube data tables, long one of the outstanding features of the Handbook, are completely up to date, with information on all new types of tubes used in Amateur applications and having the tube base diagrams re-drafted for ad-

ddtonal charty.

The "Radio Amateur's Handbook" (Twenty-Sixth Edition—1949), by the Model Radio Relay League. The Madio Relay League. The Radio Radio Relay League. The Radio Radio Relay League. The Radio Radio Relay League. The Radio Relay League

183 Elizabeth Street, Melbourne.

Another Use For Small Rectifiers

BY E. H. COX, VK2GU

Free availability for a couple of shilings each of an unlimited supply of low voltage, low current capacity copper oxide or selenium rectifiers offers an easy solution to the problem of aligning accurately the home-made, or for that matter, the commercially produced superhetrodyne.

The standard method of superhetrodyne alignment is to use the signal strength meter as a resonance indicator, but this is completely dependable only operated on some portion of the final rectifier circuit—a fairly unusual set-up. If the R meter operates from any earlier section of the receiver, it tells nothing section of the receiver, it will be nothing wise of the final circuit, or circuits in the intermediate channel and, if a temporary indicator is inserted for alignshifty districted when it is removed.

The copper oxide rectifier may be personal to the country of the said of the country of the coun

A low reading milliammeter attached to these terminals as required becomes an output meter connected in parallel with the voice coil and forms a precise resonance indicator for lining the receiver when a signal of constant amplitude modulation is injected.

The value of the series carbon resistor will depend on the voice coil impedance of the speaker and the range of the meter, but some value between one thousand and five thousand ohms will be satisfactory.

Incidentily, if as should always be the case, it incorporates a crystal oscillator for checking, the station frequency makes an ideal source of modumeter makes an ideal source of moduall that is necessary is to tune in one of the crystal harmonics on the reserver of the crystal manners of the reserver to of the frequency meter against it, and excellent stady and delicately responsive deflection of the output meter over the complete range of audibility. It is further a constant amplitude signal crystal are both working normally,

Finally, by suitably adjusting the ratio between injection from crystal and from variable oscillator, modulation at any factor up to unity can be achieved. For alignment purposes keep the beat frequency low. A high modulation frequency may cloak the precise peak of a highly selective intermediate channel.

8 Wickham Court, Red Hill, Canberra,





Outstanding on short waves.

Amalgamated Wireless Valve Co. Pty. Ltd.

47 YORK STREET - SYDNEY, N.S.W.

"Amateur Radio," June, 1949

W.I.A. Federal Executive Annual Report for 1948-49

In presenting this brief report on behalf of the Federal Executive, I would like to comment on the various fields of activity which have received attention by your Executive during this year.

It is gratifying to note that the growth of all Divisions has been maintained, and that membership in practically all grades has increased, although it is considered that still greater efforts should be made to elevate associate members to full members wherever possible.

Most Divisions are providing educational facilities to those interested in Amateur Radio, and thereby assisting them to obtain the technical knowledge required to fit them for full membership.

With regard to our relations with the Postmaster General's Department, we have successfully negotiated with them in the release of new types of emissions and frequency allocations. Our contact been maintained on the friendliest of terms and it is desired to record our gratitude to them for their co-operation and sympathetic attitude to all questions effecting Amateur Radio.

The Executive also desires to record with thanks, the tolerance and friendly co-operation of Federal Council Members, and State Officer of each Division, who have shown by their interest in Institute affairs, that spirit of good fellowship which is of paramount importance in the growth of a body such as ours.

Members will be pleased to note that arrangements have been completed with the R.A.A.F. regarding the establishment of a Reserve for those interested in Signals and Radar work. Details of these arrangements have been published in "Amateur Radio" and should serve to clarify the position to all members.

With regard to the publication of "Amateur Radio" this Executive desires to express its thanks to the Victorian Division, and its Magazine Committee, for their continued interest and untiring efforts to produce a magazine of topical and technical material of general appeal to all members. The magazine has been bas been largely responsible for the growth and development of all Divisions.

Under existing Departmental regulations, the Amateur is permitted excellent opportunities for experimentation allocation of requencies. It is essential that the Amateur must make effective use of these facilities, and it is therefore extremely important that a policy as Federal plane to justify their continuance. The magazine has proved an excellent medium for the co-ordination and promulgation of such technical fields of activity. However there is considerable need for a constant supply of technical articles to the magazine for this purpose.

Your Executive has maintained and developed cordial relations with the developed cordial relations with the developed cordial relations with the regards general information and publicity of the work of the Institute and include the property of the proper

The Federal Contest Manager has put considerable effort into the drafting of rules and checking of contest results, so that the various Federal Contests so that the various Federal Contests success. However, the number of entries in both the National Fleid Day and Trans-Tasman could have been increasistic to the success of the National Fleid Contest of the National Fleid Contests of the National Fleid C

Considerable activity has been shown by the Federal QSL Bureau Manager, by the Federal QSL Bureau Manager, and the state of the State o

Much of the work of the Federal Executive has been expedited by the use of the Federal Traffic Channel and the Federal Traffic Manager has maintained bi-weekly contacts with Divisional Traffic Officers for this purpose. Many hundreds of signals concerning Federal administration have been efficiently handled over this channel, which is commended to Federal Councillors for matters requiring prompt action.

The Federal Secretary has carried out a very considerable amount of correspondence and signals (778 letters and the second of th

Considerable work has been carried out by those members of Federal Executive responsible for technical and publicity matters. In addition, all members attend to matters under discussion with respect to the control of the control of

To all the above mentioned officers and members of the Federal Executive, I desire to express my thanks for the co-operation, active interest, and personal exertion displayed by them during the year 1948-9, and feel certain that by their untiring effort the Institute is assured of continued progress in the coming term of office.

WILLIAM R. GRONOW, Federal President.

W.I.A. FEDERAL EXECUTIVE

Statement of Receipts and Payments for year ended 31st March, 1949.

Cash in Hand and in Bank 1/4/48	£57	16	8
N.S.W. Division duplicating constitution	3	3	0
N.S.W. Division Badges	3	9	6
Western Australia Division Certificate			
contribution	7	15	6
South Australia Division Certificate			
contribution	18	5	0
Contribution to QSL Cards, E. McCarthy	3	0	0
Per Capita Payments-			
Victoria Division	16	3	6
Tasmania Division	2	2	6
Western Australia Division	-3	11	-6
South Australia Division	25	10	6 6 0 6
Queensland Division	4	4	6
	_	_	-
	6145	1	8

PAYMENTS			
Federal OSL Bureau Advance	£10	0	- 0
Wyatt Earp QSL Cards (Vardon & Son)	14	9	10
Telegraphic Address	2	2	-0
Postage Certificates	- 3	10	0
Wreath-H. K. Love	2	0	0
Post Office Box	1	0	0
Victorian Division Copies "A.R."	1		0
Secretary's Petty Cash	13	0	.0
Bank Charges		1	0
Convention Minutes (A. Brown)	10	10	- 0
Cash in Bank, 31/3/49	87	3	10
	Pederal QSL Bureau Advance Wyatt Earp QSL Cards (Vardon & Son) Telographic Address Postage Certificates Post Office Box Vistorian Division Copies "A.R." Secretary's Petty Cash Bank Charges Convention Minutes (A. Brown)	Pederal QSL Bareau Aduance . f.10 Wyatt Earp QSL Cards (Varion & Son) 14 Telegraphic Address	Federal QSL, Rureau Advance 110 0

£145 1 8

I have examined the Cash Book, accounts and vouchers of the Federal Executive of the Wireless Institute of Australia for the year ended 31st March, 1949, and have obtained all the information and explanations requested. In my opinion the above statement correctly sets out the flancial position of the Federal Executives as at 31st March, 1949, and the transactions for the year ended on that date.

31st April, 1940, and 195 transactions for the year ended on that date.

Thos. It Miscoom, Itellity manne



THE UNBEATABLE, WORLD-FAMOUS EDDYSTONE 640



NOW YOURS
FOR ONLY

£56-10

SPECIALLY DESIGNED FOR THE AMATEUR

A British-made Communications Receiver with Outstanding Performance on Amateur Bands

The Eddystone "640" Receiver has been designed in very close collaboration with leading British DX Amateurs to ensure that it possesses the special requirements expected by Amateur Operators.

An outstanding feature of the "640" is its unusually high signal-to-noise ratio, an attribute which enables the receiver to bring in, under adverse conditions, weak CX signs be proved by actual encouraged and according to the receivers of similar characteristics. One of the secrets of this important feature is the use of a single secrets of this important feature is the use of a single his supported by the opinion of skilled radio engineers. All rediector trimmer condensers and permeability-tuned coils contribute materially to the high sensitivity design crystal filter provide high adjacent channel selectivity and large attenuation of image signals. The Eddystone "640" provides a tuning range of 1.7 Mc. to spread. An "52" meter is available and may be plugged in at the rear of the receiver.

To the Country Amateur the "640" offers the excellent feature of being capable of operation from a 6 volt vibrator power unit in addition to the normal 110 to 250 volt 50/100 cycle mains.

Ask your nearest Distributor for a Demonstration and for details of Terms

- VICTORIA: J. H. MAGRATH & CO., 208 Little
- N.S.W.: JOHN MARTIN PTY. LTD., 116-118

Lonsdale Street, Melbourne.

and Charlotte Streets, Brisbane,

- Clarence Street, Sydney.

 O'LAND: CHANDLERS PTY, LTD., Cnr. Albert
- WESTERN AUST.: CARLYLE & CO. LTD., Hay
- Street, Perth, and 397 Hannan Street, Kalgoorlie.

 SOUTH AUST: GERARD & GOODMAN LTD.
- 192-196 Rundle Street, Adelaide.
- TAS.: W. & G. GENDERS PTY. LTD., 53 Cameron St., Launceston, and Liverpool St., Hobart.

N.S.W. Factory Representatives: J. B. CHANDLER Pty. Ltd., 116-118 Clarence St., Sydney.

Australian Factory Representatives: R. H. CUNNINGHAM & CO., 420 William St., Melbourne, C.1

Minutes of the Nineteenth Annual Federal Convention

At the Polenti Covention, beld at Melborron (18th April 18th April

AGENDA ITEMS

1. Moved N.S.W., Seconded Vic.: "That the opening of the Federal Executive Station VKSWIA or Expedited. Voting: For-VKS 2, 3, 0, 7, F.E.; 2007. N.S.W., Soc. S.A.: "That the pre-war system of holding Conventions in each State in rotation be reverted to." Voting: For-VKS 2, 4, 5, 6, F.E.; Agmints-VKS 3, 7. 3. Mov. N.S.W., Sec. S.A.: "That the policy of determining the location for Federal Executive between Divisions in rotation be re-adopted." Voting: For-VKs 2, 3, 5; Against-VKs 4, 6, 7, F.E.

For—We I. 1, 5; Agains—Vie 4, 6, 7. F.R.

I here W.A. See A.A. "That Fereira Recentive
is instructed to late the scenary setten from most
to instructed to late the scenary setten to manufe
the scenario of the scenario of the scenario of the scenario
the scenario of the

50.003 3, 4, 7 6. Mov. N.S.W., Sec. Tas.: "That Federal Council re-examine and restate the Institute's policy concerning the Amateur Advisory Committee." Carried unanimously.

After discussion of this matter it was Mov. N.S.W.,
See. Q'ld.: "That the policy of the Institute is that
it approves of the existing rules of the Amateur
Advisory Committee." Carried unanimously. 7. Mov. Vic.: "That the Federal Council immed-tely takes over the publication of 'Amateur

7. Nov. Vici. "That the Pederal Council Immediately sizes over the publication of Manatematical Council Immediately sizes over the publication of Manatematical Council Immediately Services of Manatematical Immediately Serv

motion and voting on the motion was the same. S. Mov. Vic. Sec. Q'fdi. "That F.E. approach the quencies adjacent to the anateur bands for emergency motivories." Cartest unanimously, P.E. approach the P.M.G.S. Department to relax the requirements at present insisted upon for the issuance of Amateur similarly handlespeed. "Votings: For—VKs. 4, 7, 6, Against—VKs. 2, 3, 6, Feb.

10. Mov. Tas., Sec. S.A.: "That action be taken by F.E. and all Divisions to publicise the agree-ment reached on phone-c.w. allocations as per item 39 of the 18th Federal Convention." Voting: For-39 of the 18th Federal Convention." Vising: Free-Vist. 2, 5, 6, 7, F.E.; Against—Wist. America. 1.1 Mov. S.A.: "That the division of America. 53:00-350 c.w., remainder phone; 7000-750 g.w., remainder phone; 14:000-41100 c.w., remainder phone; 14:000-41100 c.w., remainder phone; 14:000-41100 c.w., remainder phone; 14:000-9110 c.w., remainder phone; 14:000-9110 c.w., remainder flower, remainder phone; The S.A. Delegate withdraw this item from the 12:1 Mov. S.A.: "That the FMG. Department be asked to provide a new experimental licence for all anators, Nation." The motion lapsed for want

of a seconder.

13. Mor. S.A., Sec. Tas.: "That F.E. be instructed to approach the F.M.G.». Department to obtain as station licence be reduced to 14 years." Volume 15 years. "Very S. 6, 7; Against—VKs. 2, 8, 4, F.E. by the P.M.G. by the property of the P.M.G. byte, to allow experimental finester less to be paid in the State of the holder." Voltag: Pos—VKs. 5, 6; Against—VKs. 2, 3, 4, 7, F.E.

15. Mor. O'de: "That E.E. approach the P.M.O." Duty with paged to the use of Asse, transmission." The Queenland belogate withdraw this motion as the control of the proceedings of the proceedings the Fed. Sec. protected against the action of Queenshard in region with Hendquarters and thereby companying with Hendquarters and thereby companying confusion for the Companying the C ateur Licence.

17. Mov. S.A., Sec. N.S.W.: "That F.E. be instructed to make strong representations to the P.M.G's. Dept. to amend the regulations covering interference with B/O reception so that no action interference with B/O reception so that mo action has a manufact where the receive F.E. PAGE, Det. in amond the regulations covering will be about against an Auditor where the work-will be about a partial or a support of the control of the cont

phonon Towards to Expenditure 80 or the process the Introduct Virgin For—111, against—Viz 2, 3, 11. Mov. W.A. See A.A. "That immediate super a super construction of the Introduction of Introduction of the Introduction of International Int

missions be discussed.

After discussion of this matter it was Mov. N.S.W.,
Sec. W.A.: "That F.E. be instructed to approach
the P.M.G.s. Dept. with a view to obtaining the
privilege of playback transmissions for all Amateurs
as is done in other countries." Voting: Carried

as is done in other countries." Voltag: Carrier unanimously,
24. Mov. X.S.W.: "That the N.Z.A.R.T. be invited to join in the Remembrance buy Context for a
submitted additional information in terms of Sec.
3d of the Federal Constitution. It was decided after discussion that the original decision of the
Conceil on this matter shall stain. Terms Occ.
Conceil on the sametre shall stain. Terms Occ.
to the eliminated." The motion lapsed for want
of a seconder. of a seconder.
26. Mov. N.S.W., Sec. Vic.: "That F.E. take im 26. Mor. N.S.W. Sec. Vict. "That F.E. take im-mediate action to active rounds of overease consists mediate action to active rounds of overease consists in sembles society journals. If this precedure is found impacted sold that F.E. take action to supply sales for distribution by these societies to their interested semilers." Volga: Christian Marian Jacobs and Christian Company of the Company of the Company of the Company of the Company DX Contest (or Contests) be changed to Jame or Sec.—Vice. 4, 5, 7, Against—Vick. 2, 8, 6, F.E. 28. Mov. Q'M., Sec. Soc. "That for the 1949 or loss."

or less. Miter discussion the following motion was adopted: "That the Council reaffirms the decision reached under item 50 of the 18th Convention concerning the period of operation of the 1949 DX Contest and that the F.E. should publicies this aspect more fully in future contests." Carried

Mov SA . "That an antrant in contacts he 39. Mov. S.A.: "That an entrant in contests be allowed to use any number of hours operating during the Contest provided that he does not exceed the actual specified limit, the number of hours not necessarily to be consecutive hours of operating." The S.A. Delegate withdrew the motion in view of the decision reached in item 38. 5) No. No. W. See, G.A.: "This P.R. center from monthly contains, between the W.A. antima to exchange views, problems of interference and property of the problems of the problems." In Proceedings of the Proceedings of t Voting: For—VKs 2, 3, 4, 6; Against—VKs 0, 7, F.E.
Mov. F.E., Sec. N.S.W.: "That a discussion be held

on obtaining speedier ratification of motions and actions required between Conventions, placed before the Divisions by F.E. on behalf of Federal Council." After discussion had taken place the following was Mov. N.S.W., Sec. W.A.: "That this Council considers the ratification of Federal matters at the consider the settlement of priceral after the third control of the property of the parameter specific control of the property of the p

ITEMS OF GENERAL BUSINESS All Divisions to ratify all items under this

heading.

At the commencement of the session on Sunday, 17th April, 1949, it was announced that the Chair man was unavoidably absent. It was then moved by the N.S.W., Delegate and seconded by the W.A. Delegate that Wr. G. Glover take the chair. This motion was carried ununimously and Mr. Glove acted as Chairman for this session of the Conven acted as Chairman for this session of the Conven-tion. The Victorian Delegate was absent from this

exception of the inclusion of Nth. Territory.

2. Mov. Ns.W., Sec. Qidi.: "That F.E. be requested to organise a contest, with trophy, to be conducted annually on the V.h.f. hands during the summer months, to include New Zealand Amateurs, and that provision should also be made for a trophy for competition amongst interested v.h.f. listeners." Voting: Per—VKs. 2. 4, 6, 6, 7, P.E.

3. Mov. F.E., Sec. S.A.: "That an annual alloca-tion not exceeding £9/9/- for trophies or prizes be made for the National Field Day Contest for be mide for the National Field Day Contest for distion between each of the three sections." Voting: 4. Mov. N.S.W., Sev. W.A.: "That F.E. issue immediately upon completion of the Convention each year a calendar showing the following information: any new regulations are expected to become opera-tive, and dates of any importance in Federal admis-siration, etc." Voting: For-YAS 2, 4, 5, 6, 7, services.

istration, etc. "vous, ever like the Remembrance By. Mow. W.A., Sec. F.E.: "That the Remembrance Bay Contest Rules be modified by the inclusion of multiplier to the State entry, based on the proportion of State entrants from the total number of the state of the sta

6. Mov. Q'ld., Sec. W.A.: "That a discussion take place on "Gremin" and the tuture publication of his column."

After discussion had taken place on this subject and after the explanation offered by F.E., the Q'land Delegate was satisfied on this matter. 7. Mov. Tas.: "That F.E. approach the P.M.G's. Dept. for allocation of bands for the control of model aircraft and such like purposes." In view of the information received from F.E., the Tas. Delegate withdrew the motion-

8. Mov. W.A., Sec. Tas: "That the P.M.G's. Dept-be approached to permit the transmission of tele-pheny and cw. in plain language instead of such transmission being restricted to the English lang-tuage as at present." Voting: For-WKs 2, 4, 5, 6.

transference of the present." Voting: Format FE approach."

J. E. Wey, S.A., Sec. N.S.W.; "That FE approach the P.M.G.". Dept. to clerity the position with regard to the period of issue of portable licences."

Voting: For—VKS 2, 4, 5, 6, 7, F.E.

W.A. Sec. S.A.; "That the W.I.A. inM. Alarm.** 10. Mov. W.A., Sec. S.A.: "That the W.I.A. inform the P.M.G's. Dept. that it views with alarm the large amount of transmission equipment which has found its way via Disposals into the hands of uniformed owners." Voltag: For.—VK 2, 4, 5, 6,

Mov. N.S.W.: "That the F.E. approach the P.M.G's. Dept. with a view to ensuring that no charge be made for the Handbook for the Guidance of Amateur Operators." The motion lapsed for want of a seconder. The Chairman and the Victorian Delegate were again in attendance at the opening of the last

12. Mov. Vic., Sec. W.A.: "That the F.E. com-municate with the I.A.R.U, with a view to obtaining additional publicity space for the W.I.A. in "QST." Voting: For—VKs 2, 3, 4, 5, 6, 7; F.E. abstained from voting.

13. Mov. Vic., Sec. N.S.W.: "That the call sign of the F.E. station be VK1WIA." Voting: For— VKs 2, 3; Against—VKs 4, 5, 6, 7; F.E. abstained 14. Mov. Vic., Sec. W.A.: "That the cost of the Federal Convention entertainment be included in the Convention expenses." Voting: For—Vs. 2, 3, 4, 5, 6, 7; F.E. abstained from voting.

Mov. Vic., Sec. N.S.W.: "That all call signs in the P.M.G. Callbook be followed by the name and address of the holder of such call sign." Voting: For—VKs 2, 3; Against—VKs 4, 5, 6, F.E.; VK? abstained from voting.

16. Mov. Vic., Sec. W.A.: "That all cases of b.c.l. interference be brought to the notice of the A.A.C. in the appropriate Division for assistance

and guidance to the Amateur concerned." Voting: For...VKs 2, 3, 4, 5, 6, 7; F.E. abstained from voting.

17. Mov. N.S.W.: "That Federal Council considers
the rules concerning Branches as in operation in
N.S.W. with a view to their inclusion in the
Divisional Constitution." Divisional Constitution."
Having considered the above, the N.S.W. Delegate desired recorded that he tables the provisional rules for the establishment of Divisional Branches as in operation in N.S.W. Division with the suggestion that F.E. might use them as a basis for the appropriate section of the uniform divisional constitution now in preparation.

18. Mov. N.S.W., Sec. S.A.: "That the principle of the use by Member Clubs of a small replica of the W.L.A. emblem with the words "Member Club beneath be agreed to." Voting: For —Via 2, 4, 5, 6, 7, F.E.; VR3 abtained from voting.

5, 6, 7, P.E.; YAS abstanced from votung.

10. Mov. S.A., Soc. W.A.: "That the Convention discuss Convention Delegates expenses."

After the matter had been discussed the S.A. The Convention Delegate asked for an explanation of the payment of Delegate's expenses to the 18th Convention. It was pointed out that there was no intention by that Convention to pay delegate's expenses. penses for that year.

20, Mov. W.A., Sec. F.E.: "That Divisions pub-licise the fact that members in outlying districts may obtain their copies of 'Amateur Radio' by air-mail by making necessary arrangements through their Divisional Council. Such extra expense to be borne by the member." Voting: Carried be orne unanimously.

21. Mov. N.S.W.: "That Federal Councillors receive a report from the F.E. on the progress of the Divisional Constitution." Divisional Const After discussion it was moved. That N.S.W. Delegate Mr. John Moyle to prepare a first draft copy of the uniform divisional Constitution in collaboration with F.E." Voting: For—VKs 3, 4, 5, 6, F.E.; VKs 2 and 7 abstained from voting. 22. Mov. Tas.: "That the necessity for a majority of voting members for Federal Councillors be de-termined."

termined."
After discussion the following was moved by Tas.,
Sec. N.S.W.: "That F.E. be instructed to take steps
to have item 9 of the Federal Constitution amende
to read: "That each representative of a Division on
the Federal Council shall be elected animally during

the period of sixty days immediately prior to the commencement of the annual Federal Convention by the voting members of the respective Division. Contained and the second of th

a total of £279/10/-.

The above estimates are based on the assumption that the 20th Convention will be held in Mel-

25. That the location of the 20th Annual Con-25. Inkt the location of the 20th Annual On-retion be determined. Moved by Tas, Sec. N.S.W.: "That in view of the extra expense of holding the Convention else-where, that the next Convention be held in Mel-bourne at Easter. Voting: Carried unanimously."

BUY YOUR DX FRIEND A YEARLY SUBSCRIPTION TO

"AMATEUR RADIO"



Interstate Representatives:

BRISBANE Chandlers Pty. Ltd., Cr. Albert & Charlotte Streets.

29-35 FLEMINGTON RD., NORTH MELBOURNE

ADELAIDE C. N. Miller, Worando Buildings, Grenfell Street.

PERTH R. D. Benjamin, 197 Murray Street.

holds pride of place in the best rigs.

TASMANIA W. & G. Genders Pty. Ltd., 53 Cameron Street, Launceston.



- ★ The Ham specially catered for.
- * Quality Cards at economical prices,
- * Prompt Service.
- * One, two or three colours if required.
- * Interstate orders handled.

QSL CARDS

The DEE WHY PRINTING WORKS is making available to the Amateur Experimenter a Special QSL Card Printing Service. Knowing the requirements of Hams, we are confident the service offered will be unsurpassed in Australia.

Cards can be printed to your own specifications, and if illustrations or blocks are necessary, our Art Department can produce these for you.



Dee Why Printing Works 67 HOWARD AVENUE, DEE WHY, SYDNEY.

Telephone: XW 8367.

Proprietor: GEOFFREY BOWER

McGILL'S (Est. 1860)

OVERSEAS AND LOCAL POPULAR MAGAZINES
OBTAINABLE ON SUBSCRIPTION

AMERICAN . . .

Audio Engineering, £1/6/-; CQ, £1/12/-; Communications, £1/4/-; Electronics, £7/6/-; Popular Science, £1/5/-; Popular Mechanics, £1/8/-; QST, 33/6; Radio News, £1/12/-; Radio Electronics, 22/6; Science Digest, 24/-; Science and Mechanics, £1; U.S. Camera, 28/-.

ENGLISH and AUSTRALIAN . . .

Australian Radio World, 16/-; AmateurRadio, 6/-; Electronic Engineering, £1/12/6; Radio and Hobbies, 12/-; Radio and Science, 12/-; Shortwave Magazine, £1/7/6; Wireless World, £1/12/6; Wireless Engineer, £2.

(Add exchange to Country and Interstate Cheques.)

Large Range of Technical Books, Stationery and Novels on Display.

Mail Orders by Return Post.

McGill's Authorised Newsagency

183-185 ELIZABETH STREET, MELBOURNE, C.1, VICTORIA.

(The G.P.O. is opposite) M 1475-76-77

Page 16 "Amateur Radio," June, 1949

FIFTY MEGACYCLES AND ABOVE

Compiled by J. K. RIDGWAY, VK3CR.

From this month onwards a new presentation of Fifty and Up will appear. Instead of the notes appearing under separate Divisional headings, the material will be used to make up an article which will attempt to give an overall ploture of v.h.f. doings in Australia. In this way much duplication will be avoided and it is hoped that the continuity will be improved. Acknowledgment is due to VKs 2AH, 3IM, 5PS, 6FC, and Pete Frith for material used in this article.

used in this articles.

The V.H.F. Section of the N.S.W. Division held their monthly meeting on the 13th May at 8 p.m. Attendance was 34 including some visitors. The Sydney Division of the W.L.A. was represented by Mr. Hicks and Mr. McNaughton. They confirmed reports of F.H.Q. interest in v.h.f. work. The business of the meeting was for the purpose of re-election men of the moeding was for the purpose of re-election.

For other, The me videous art. Giangua and for other the control of th

A debate you antennae followed. The title being "That Horizontal is better than Vertical Polarisation." The debate was a long success. The membership of the property of the p

SO MEGACYCLES

50 Mc. appears to have taken the K.O. pretty generally throughout VK during the past month. In N.S.W, the main reasons have been 28 Mc. DX and the 2 metre contest. However, despite the fact excellent contents have been made. Surpluse of the month was 21/Yz contact with 7XL at 2120 bours on 14/5/40, VKS signals were also heard. QSB month was 2LY2 contact with 7XL at 21210 bours on 14/9/40. VSA signals were also heard, CSB has been every noticeable in VKL, particularly on almost any time has been been with the control of the contr

Lack of work on 50 Mc. in Victoria appears still Lack of work on 50 Mc. in Victoria appears still to be due to the gaze's pre-couption with 578 Mc. insefar as Aelbourne, Austinea are concerned. Secondary of the control o

3811, 3414, 3414, and 3APF.

37H at Ylmar continues skeds on Mondays and Thursdays at 2030 with 3HK, yet despite the good signal he patts in he rarely has any other contacts. How about it Melbourne gang! Little in the way of DX last month in VKS, the enly occasion being at 2030 on the 23gl April when 3ABA heard 4BT at 87 for a short while.

at S7 for a short while.

50 Mc. news from Western Australia shows that
6WG at Albany worked 5RT and 5CU on April 20,
but the band was only open for a short while.
Wally must have a good location. He says that he
has made eight contacts with Eastern Sates every
month for the past six months. No interstate sigmains have been heard in Perth since January. 6PU mals have been heard in Perth store January, 67°C made first two-way contact with 60% at Harvey on the control of the control

144 MEGACYCLES

Highlight of this band in N.S.W. was the Glade-ville Radio Club's novel field day. Ten stations in the field had to pokition each other from bearings obtained. The control station distance was known to each participant and by calling for bearings of other stations to the control, triangular plotting his map showing location of all stations

It was smaling to hear the number of stations (approx. 35) working all day on 2 metres. Tals field day was the best so far held and already enquiries about the next can be heard. Stations in the field were 2ILL, 2IT. 2NP, 2YM, 2WW, 2ZB, 2AMO, 2AMF, and 2ABG. Other call signs were among members of field parties.

among members of field parties.

2.10% has 6.25 mod, one, going nicely and very
attack. Another clean signal belongs to neveromer
receiver with conventred line 1.4 siage, 2.83% is a
contractive with conventred line 1.4 siage, 2.83% is a
contractive with conventred line 1.4 siage, 2.83% is a
contractive with the conventred line 1.4 siage, 2.43% is
contracted 2.017 at Consuct on two consecutive error
and super-regen, receiver, 2.00 with 527 and 3
over 3 beam is only in the 1.4 siage 1.4 siage
and 1.4 siage 1.4 siage 1.4 siage 1.4 siage 1.4
mixer, it helps to make up for his location. 2.100
in to be congruinted upon the signal out of "Latt." over 3 [boms is going nicely, 2MQ nas way, moreover, two 6.4 grounded graft A. dagage, 6AB, 24 grounded graft A. dagage, 6AB, 24 grounded graft A. dagage, 6AB, 24 graft A. dagage, 7AB, 24 graft A.

In Victoria the band was rather quiet last mouth with not as much activity as would be expected. The only new station to put in an appearance was 3TF. He is using a converted 522 as the transmitter with the popular 6.86-6.865-6.96 band-pass converter feeding into the 522 1st. channel for receiving. Gordon purs out a good signal via a converse venture into the par 2.1. Childred for three element excluded beam 200 Mz. has a re-traction of the converse of the converse of the transmit. 22% of Baltara, has sent had trough the sourcer down to Mohomes and it has been doing source from 200 Mz. had been doing to sea 2.81A, who found it to be somewhat better was the sent to rey the converter and Ketth found to work 100 M in Baltaries for the fact time. 21KI was the sent to rey the converter and Ketth found to work 100 M in Baltaries for the fact time. 21KI was the sent to rey the converter and Ketth found that the converted of the converted and the con-traction of the converted of the con-traction of the converted of the con-traction of the con-tra

Some contacts have been made between Ballarat Some contacts have been made between Ballarat and the Grelong area, a distance of about 55 miles. 36M and 3ZL in Ballarat have worked 2BW (Portalington) and 3VF (Drysdale). In Geology 3ARE works on 144 Mc, quite a lot and has worked 3ABE with good eignals. Bit's Bit'd receiver is quite hot on 144 Mc, now. 3AIG has been having condenser trouble but hears the Geology gang at good signal combined to the state of the stat

In South Australia new recruits to 144 Mc. in-clude Treasurer Gordon Bowen 5XU and 5ME. Both are using n.b.f.m.

From Tassmania Pete Prith announces that he will be shortly having a cc. 144 Mc. transmitter permanently installed on Romy Hill, from which location he expects to put in a good signal into most parts of Hobart. So any of the Southern zone gang who want signals are invited to tee up skeds by ringing Bel. 132.

7BM is back in circulation and is cranking up the parallel rod oscillator again. It is reported that it oscillates much more readily on 288 Mc. than on 144 Mc. From the Northern Zone we hear Gan on 141 Me. From the Northern Your we has 1700 years had a Crit going of GOO on 3 Me. 1700 had a Long using GOO on 3 Me. 1700 had a Long using GOO on 3 Me. 1700 had a Long using GOO on 1 Me. 1700 had a Long using GOO on 1 Me. 1700 had a Long using GOO on 1 Me. 1700 had a Long using GOO on 1 Me. 1700 had a Long using GOO on 1 Me. 1700 had a Long using GOO on 1 Me. 1700 had a Long using Good on 1 Me. 1700 had a Long using GOO on 1 Me. 1700 had a Long using Good on 1 Me. 1700 had a Long using

576 MEGACYCLES

Tieroria appears to be the only State bitten by Full Continuous to be the only State bitten by State bitten to the Continuous to be above and activity has been at a high red during the pain mosts. ASW member of high locations and some very interesting on the State of Agril when Res west to Mr. Daudesong, the was using his 7st element beam (12) and contacted ASA (37 both ways). 3IM (37-36 both ways) 31M (37-36 both

covered was about 20 miles.

On the 8th of May 3ANW went to Beckett Park,
Riveys, approx. 800 ftr above sex level and heard
Life of the Section of the Secti

distance, however, being only about 3 miles.

3DA is now established on the band for two-way
work, having built up push-pull RLi8s and has
worked 3RR and 3XA. 3EH has put up a 16
element beam and is able to transmit and receive
on the band. However Ern has no active stations
close to him and has not been able to work over
the hills to the others on the band at the time

S.S.S.C. TRANSMISSIONS VK7LE is one of the first Aus-

tralian stations to use single sideband suppressed carrier, since its authorisation by the P.M.G's. Department for Amateur use. We have been advised that he will be on the air on s.s.s.c., Thursday evenings 8 to 9, and Sunday mornings 8 to 9, transmitting on a frequency of 7140 Kc.

Hints on how to receive these transmissions are described on page 4 in this issue, and an article on the equipment used by VK7LE will be appearing shortly in "Amateur Radio."

ARA has push prill RL16s going as a transmitter
Jim has synted JANW as mentioned before, and
Jim has synted and principle of the principle of t

2300 MEGACYLCES

Interesting news from 3QO who has a GL440B lighthouse tube working in a three-quarter wave coaxial line oscillator on this band. Mac finds outstreed on the same street on the same stre

FEDERAL, QSL, and DIVISIONAL NOTES



Federal President: W. R. Gronow, VK3WG; Federal Secretary: W. T. S. Mitchell, VK3UM, Box 2611W, G.P.O., Melbourne,

NEW SOUTH WALES Secretary.-Dick Dowe (VK2RP), Box 1734, G.P.O.,

Meeting Night.—Fourth Friday of each month at Science House, Corner Gloucester and Essex Sts., Sydney. Sts., Sydney.
Divisional Sub-Editor.—H. F. Treharne, VK2BM, 5

Divisional Sun-Laft Sec.—II. P. Trobatuse, VEEDM. 6.
P. A. II. Alexander, VEED M. 11. No. 12. No. 12.

Section VICTORIA
Sectio

WI BROADCASTS

All Amateurs are urged to keep these fre-quencies clear during, and for a period of 15 minutes after, the official Broadcasts.

VK2WI.—Sundays, 1100 hours EST, 7196 Ke. and 2000 hours EST, 50.4 Me. No fre-quency checks available from VK2WI. Intra-State working frequency, 7175 Kc.

VK3WI.—Sundays, 1130 hours EST, simultane-ously on 3580 and 7196 Ke. and re-broad-cast on 50 and 144 Mc. bands. Intra-State working frequency 7185 Ke. Individual working frequency 7185 Kc. Individual frequency checks of Amateur Stations given when VK3WI is on the air.

WHEN VASWI IS ON LINE SAT. SIMULTANCOUSLY ON 3750 KC, 7196 Kc, 14342 Kc, 52.4 Mc, and 144.183 Mc. Proquency checks are given two nights weekly, and the times are amounted during Sunday broadcasts. 7010 Kc, channel is used from \$1.00 km, and 1000 to 1030 hours each Sunday as VK4 query service to VK4WL

VK5Wi.—Sundays, 1000 hours SAST, on 7196 Ko. Frequency checks are given by VK5DW on Friday evenings on the 7 and 14 Me.

VK6WI.—Saturdays 1400 hours, Sundays 0930 hours WAST, on 7196 Kc. No frequency checks available.

VK7Wi.—Second and Fourth Sundays at 1000 hours E.S.T. on 7195 Kc. No frequency checks are available.

OUFFNSLAND Secretary .- W. L. Stevens, VK4TB, Box 638J, G.P.O., Brisbene.

Meeting Night.—Last Friday in each month at the State Service Building, Elizabeth St., City. Divisional Sub-Editor.—F. H. Shannon, VK4SN, Minden, via Rosewood.

SOUTH AUSTRALIA

Scopetary.—E. A. Barbier, VK5MD, Box 1234K, G.P.O., Adelaide.

Meeting Night.—Second Tuesday of each month at 17 Waymouth St., Adelaide. Divisional Sub-Editor.—W. W. Parsons, VK5PS, 433 Explanade, Henley Beach.

WESTERN AUSTRALIA Secretary .- W. E. Coxon, VK6AG, 7 Howard St.,

Meeting Place.—Padbury House, Cnr. St. George's Ter. and King St., Perth. Meeting Night .- Watch the Monthly Bulletin.

Divisional Sub-Editor.—D. Couch, VK6WT, Mary St., Waterman's Bay, Western Australia.

TASMANIA Secretary.-R. D. O'May, VK70M, Box 371B, G.P.O., Hobart.

Meeting Night.—First Wednesday of each month at the Photographic Society's Rooms, 163 Liver-pool St., Hobart. Divisional Sub-Editor.—Capt. E. J. Oruise, VETEJ, Anglesca Barracks, Hohart. Northern Correspondent: C. P. Wright, VE7LZ, 3 Knight St., Launceston.

FEDERAL DX C.C. LISTING

With this issue, we have renumbered the members of the Club in each of their Sections, and have listed all present members with their scores. We are still awaiting the Zones confirmed totals from some members who should let the Awards Committee know at the earliest.

Zn. Cts.

Zn. Cts. VK3JD (1) . 33 VK6RU (2) . 37 VK3BZ (3) . 40 VK6KW (4) . 39 107 VK8IG (5) . 100

Cts. Zn. Cts. VK4DA (7) . 38 VK4HR (8) . 38 VK2QL (5) . 40 VK4RF (11) 34 VK3KB (10) VK3UM (12) 36 VK3CN (1) VK3BZ (6) 136 VK3BZ (6) VK3VW (4) VK3EK (3) VK4EL (9) VK2EO (2)

20 Cts. Cto VK3BZ (4) . 40 VK2DI (2) . 40 VK3JE (12) 39 VK3OP VK2YL VK4DO (19) 108 VK3HG (3) . VK6RU (8) . VK3KX (1) . VK2ACX (6) VK2AHA (9) VK2ADT (14) VK3MC (5) VK4HR (7) VK6KW (13) 39 VK2NS (16) 39 VK4EL (10) 39 128 VK2AHM (20) VK4RC (21)

120 Endorsements in the form of a sticker for the Certificate are available for any of the above mem-bers submitting additional verifications from 20 countries. COUNTRIES LIST The following prefix blocks have been allotted as

| Hows:—
KG61A-KG61Z Bonin and Volcano Is. (Iwo Jima).
KG68A-KG68Z Marianas Is. (Saipan).
KG67A-KG67Z Marianas Is. (Tinjan).
KC64A-KG67Z Caroline Islands.
For Trieste, add prefix AG2, MF2. Add new countries-Macquarie Island (30) VKI Ismel (20) 4X4 4X4

PHONE-C.W. ALLOCATIONS As agreed to by the 18th and confirmed by the

19th (1949) Conventions, all Divisions agreed to publicise the following voluntary band sub-divisions on a "gentlemen's agreement" basis. They are:—

3500-3550 Kc. c.w. only, remainder phone & c.w. 14000-14100 21000-21100 28000-28100

It is intended to bring this sub-division to notice egularly and we enjoin all phone operators to beeve this voluntary agreement. It is working regularly and we estoin all phone operators to observe this voluntary agreement. It is working to be a superation of the contraction of the con-some more attention in this regard. Although, by some more attention in this regard. Although, by this agreement, c.w. may operate anywhere on the allotted bands, if the phone men stick to their the c.w. operators will automatically keep before the c.w. operators will automatically keep before of the band. Let us have voluntary restrictions, rather than enforced ones!

W.I.A. ACTIVITIES' CALENDAR May 1-N.b.f.m. and s.s.s.c. emissions ef-

May 16-Convention Minutes circulated-June 4-5-1949 Trans-Tasman Contest. June 13-Ratification of Convention items required. August 13-14-1949 Remembrance Day Contest.

S.S.C. TRANSMISSIONS The P.M.C's, Department has requested that each Division set up a key station using the above type of emission, and it is now advised that the VK7 Divisional station will be VK7LE. His times of operation will be:

VK7LE, 7140 Kc., Thursdays 2000-2100 hours

VK7LE, 7140 Kc., Thursdays 2000-2100 hours E.A.S.T. and Sundays 0800-0900 hours E.A.S.T. NEW SOUTH WALES

The annual meeting was well attended. The visitors included 6GM, 4ZU, 4DO, 3VA and 3HW. The President, Morris Meyers 2VN, annuanced the result of the ballot for the new Council and de-

chired the following decised; Britan Anderson 1 AND.

Clive Historians 2177, Naughton McNaughton 2374,

Clive Historians 2177, Naughton McNaughton 2374,

A fecture under the caption of "Experimental Resonance of the Control of the

The All their fact (count) meeting, members elected and Mr. All their fact (count) meeting, members elected and Mr. N. H. Bleck 2A/RI and Mr. C. Bleckhoot (Count) and the Mr. C. Bleckhoot (Count) and Mr. N. H. Bleck 2A/RI and Mr. C. Bleckhoot (Count) and Mr. C. Bleckhoot (Coun

mittee, Brian Anderson 2AND.

The Council instructed Bill Hicks, Clive Hutchison, Naughton McNaughton, and Dick Dowe to visit Newcastle, represent the Council and make final arrangements for the establishment of a Brunch of the N.S.W. Division of the Wireless Institute of Australia in the coalifieds district.

NORTH SHORE ZONE A bit of a nip in the air now, and a correspond-ing increase in DX potentialities. 2NI has his new

ing increase in DX potentialities. 2NI has his new 2-element beam in operation now and a nice mechanical job it is, too. He's having some difficulty with feed troubles, though, inductive coupling being the snag. 2AND reckors he's joined the TX C.C., having now made 103 drawings of p.p. 807 rigs. 2TL still working on the threatened beam, but it sure

takes time! 2RP combining house-building with his duties as Divisional Secretary, which doesn't spare him much time for QSOs.

spec him much time for QNA.

285 a still deep business with his rotary dipole—in fact only conservative debards like 43M pole—in fact only conservative debards like 43M incontrol to deep pp. 14 a non-law were taken of
the blog who have verical well over the hundred
for the body who have verical well over the hundred
for the body who have verical well over the hundred
for the body who have been pole of the body who have
for the body have been pole of the body
med of a fet into the pole of the body
med of a fet into the pole of the body
med of the body.

201 The blog done any night
of the week.

SOUTH ZONE

The main topic of the moment in this district seems to be the v.h.f. 144 Mc. contest which has just commenced. Three stations, 2ANB, 2WJ, and 2VW are competing and results should be interesting. The Kingsford Radio (Club will soon have their new transmitter on the air, operating under the call of VK2AKC, and will be looking for contacts on 144 and 7 Mc, bands,

and 7 Mr. hands.

J. Mill soon has his 20 metric some very security of the control of the contro to wait a while before receiving his call, WESTERN SUBJIRES

WESTERN SIGNORES

Lately PALA has been cleaning up the DX on 10, and 1

by A.W.A. engineers is planned and they will cover phase modulation, transformer design, and n.b.f.m. Observation of the control of the co field with 2HL in control as master station. Launch plends are another innovation. Meetings are held processed and the processes are not seen as the processes of the processes

DY NOTES BY VICEOU

As was antiqued by working from the lone-spheric Bulletin, DX conditions for April were not good, and there appears to be not much hope for May either, so there is not much to report as far as plenty of the rarer DX is concerned. Just the same, some very nice DX was heard, unfortunately not worked in most cases, at this neck of the woods. not worked in most cases, at this neck of the woods. The following good ones were heart. Vep and EKIDO, EASMO, TASOVU, OGSBA (4 p.m. SST), INSERAA, ULFAKA, ULFAKA, UNIAS, ULFAKA, UNIAS, ULFAKA, ULFAKA, UNIAS, ULFAKA, were heard round 3 to 4 p.m. SST which seems the best time at present. OXISIO sup he will be leaving to the company of the company of the company of the leaving 1 believe. Greenland has been a lot easier or raise in recent weeks, two contacts a night being

possible.

Some of the gang have come to my assistance with some "gen." Many thanks to 9RR, 20A, 18NS, 2ADR, 2ABM and the old staluart, 2ACA. WFOP is looking for contacts with any VRs, who are interested in be-keeping. He puts a good signal in here so, should be an easy contact on 14 Mc. for anybody interested. A few OTHs may be of interest;

A few QTHs may be of interest: ZS9D—Box 14, Francistown, Bechuanaland; PK3AT—J. H. Brist, Wonekiti Blyde No. 6, Socrabala; YS1RA—c/o. American Embassy. Sas Salvador; EKLDO—Bro. 39, Tangler; YUTRO—Wait for his QSL; TASQVU—A.R.R.L. QSL Bureau.

"A.R.R.A.L. Queen seem life, pickings of which are SKIDP, "Old Did. ASSAMS ETTAD, HIGGS EXTERNAL CONTROL ASSAMS ETTAD, HIGGS 2AHM, the low power merchant, has worked, with an average of 8.8 watts, 14.8 countries. Out 28 Mc. Claims, justly 1 think, he is the lowest 28 Mc. Claims, justly 1 think, he is the lowest of a genemotic, has goose high power to the true of 20 watts. 2AUX advises his W.A.Z. application has been OR.Z. Comparis Arthur.

Listings for the mosth are:—2NS 159 and 39, 24TH 145, 2ADE 198 and 39, 2YC 108 and 38 (11 new countries in 10 days), 9MR 76, 4DA 154, 2DI 197 and 40, 2QL 133 and 40, 2ACX 186 and 40,

The guy who led me astray by introducing me to Ham Radio, 20W ex-2FZ, threatens to migrate from 7 Mc. to the DX bands by building a new

COALFIELDS AND LAKES

COALPIELDE AND LAKES

AND Circins are final, at the moment has 50 frequency motor, DX quies and Prn still hooking for frequency motor, DX quies and Prn still hooking for the party of the WESTERN ZONE

The small two terms are not to the control of the c e.w., often heard on the boy with all weights of 2EI pages of the Geosciental, 1950 using yay. 2EI pages of the Geosciental of the state of the Geoscient of th

A.O.C.P. CLASS

The Victorian Division A.O.C.P. Class will commence on Thursday, 14th July, 1949. Lectures are held on Monday and Thursday evenings from 8 to 10 p.m. Persons desirous of being enrolled should communicate with Secretary W.I.A., Victorian Division, 191 Queen St., Melbourne (Phone FJ 6997 from 9 a.m. to 5 p.m.), or the Class Manager on either of the above evenings.

THIS GLO-RAD

SYMBOL IS YOUR GUARANTEE OF WELL ENGINEERED PRODUCTS



IS PARAMOUNT.

SERVICES GLORAD ENGINEERING 186a Riversdale Road (Cr. Robinson Road)

HAWTHORN --- VICTORIA NIGHT: WX 3440 Phones-DAY: WA 3819

"HAM" RADIO SPECIALS

Here and Inside Front Cover

SALE SNAPS

SALE SNAPS AMERICAN INTER-PHONE CONTROL UNITS, less

English Hi-Frequency Receiver, type R3084A, band tuning coverage approx. 170 Mc. Valve line up—two RL7s, one RL16, six VR91s. Aerial switching motor, valves, etc., two at £5 each.

Osram Neon Lamps. Ideal for VR Tubes. 2/6 each. Mazda 4 watt Pencil Type Flourescent Tubes. Ideal for R.F. Indicators, 1/6 each.

Low Impedance Headphone Leads. 1/- each.

ODDMENTS.-Volume Controls, all types. Each 1/-.

Standard Notes for Wireless Maintenance Mechanics, including Bendix AT5, AR8, etc. 5/- each.

Valves, full of useful parts. Each 5/-.

AT5 TRANSMITTER KEY CLICK FILTERS. Full of useful parts (weigh, 20 lbs.). Each £1. GENEMOTORS.—AT5, AR8 (complete). Slightly damaged switches, 24v. input, 550 and 300 volts output, at 250 mills. To clear—£3.

Tranpro Valve and Circuit Tester. Very late model, had little use, excellent condition. One only available at £15. Relays, 24 volt, single contact in bakelite case. Ideal for the rig; Bargains at 3/6 each.

VALVES DRASTICALLY CUT

SPECIAL VALVE OFFER Owing to a Special Purchase we are able to offer 6V6 Valves at the low price of 9/6 each or £5 per dozen.

	. VALVE	s	Huge Quantity of Assorted English Valves	NEW VALVES TESTED
	Disposais		English valves	832 American £2
1625		10/-	VP41)	6L7
1626 '		7/6	VR102	
1629		7/6	VR92	955 7/6
VR105		10/-	VR122	6R7 9/6
2X2		7/6		
879		7/6		7C7 9/6
6CE		7/6	VR65 To	6J5 7/6
19C AT		7 10	VU139	6SH7 7/6
19667		7/6	VU111 Clear	
19C A 117		710	VU39	6Н6 7/6
19110		T 10		12J5 7/6
1000		7/6	Secondhand Valves, all types.	19007 7.10
12J5				
		7/6	Battery and A.C. to Clear.	3B24 7/6
		10/-	6J7 5/-	
		10/-	6U7 5/-	
		7/6	6V6 5/-	BATTERY TYPE VALVES
		7/6	1J6	
		7/6	erra E/	1J6 7/6
" 6C5 .		7/6	600	1K4
" 6SS7		10/-		1H4 7/6
" 6SA7		10/-	evro F/	
" 6F6		10/-	6K8 3/-	1M5 7/6
" 0375		10/-	Many others; you name, we'll	1K7 7/6
CD4		7/6	supply them.	Locktal Valve Sockets 9d.
" 0154 .		1/0	Supply moin	

WANTED TO BUY .- TRANSMITTERS, RECEIVERS, VALVES, COMPONENTS, TRANSCEIVERS, TYPE 3 MARK II., TYPE A MARK III., GOOD PRICES PAID.

5A Melville Street, Hawthorn, Victoria

(Phone: Hawthorn 4465) (East Kew Tram Passes Corner)

Page 20 "Amateur Radio." June, 1949

SOUTH COAST AND TABLELANDS

SOUTH COME AND TREELLANDS
The none welcome ALVN who is operating from
\$12,0 or \$100.000 and \$100.000 and \$100.000 and \$12,0 or \$100.000 and \$12,0 or \$100.000 and \$12,0 or \$100.000 and \$12,0 or \$100.000 and \$100.0000 and works 2ALS on c.w. Paid a visit to 20Y at Goul-burn and had a look see at some very well-constructed equipment. New rx. is a double conversion job, and the v.f.o. and tx. are beautifully made. 2AJP called in for a few minutes, he is "spars" at HQ of Southern Electricity at Goulburn. of Southern Electricity at Goulburn.
2,MZ active using suppressor modulation, radio is also his bread and butter, works at b.c. station 20N. 20UI active on 40 and 6 using remote control skeds 2JU Sydney on 6. 2JQ stopped in come and minutes when passing through to Turnut, looks well and sports a new car. Took away a circuit so well and sports a new car. Took away a circuit so perhaps a change do n.b.fun. will be on one day. BPI of duty while undergoing operation for the instance, IVS back at Cabberr relevence at 260. In Sydney, IVS back at Cabberr relevence at 260. In Sydney, IVS back at Cabberr relevence at 260. In Sydney, IVS back at Cabberr relevant at 260 and 26

VICTORIA

At the May general meeting, before the commence-ment of the main business of the evening, three short films of interest to Amateurs were shown. The first film, entitled "The Creation and Behaviour of ed "The Un illustrated Radic Waves," illustrated diagrammatically the

First Convention of North Coast and Tablelands Zone (N.S.W. Division), Urunga, 24th and 25th April, 1949

(N.S.W. Division), Urunga (Grat tree from little access gave ... and from a chance remark it leads as thought an Annual Common remark it leads as thought an Annual Common remarks it leads as thought an Annual Common remarks and the common remarks and temporary and the common remarks and temporary and the common remarks and the common remarks

was DM, penci and paper and rapt pupils.

Saturday was arrival day, either at the 2XO
beathed, beautifully situated near the bridge over
arrived at the hotel, one's arrival was quickly relayed
via 2AJTs portable at the hotel to portable 2PA
at the boathed. 2WH and 2ACU gave a bull-toball description via portable radio of their trip
from Coosanuble and are thinking of Loran for the

from Documbie and see thinking of Lenn for the Statisty Committee and everybody pathered at Too sheld giving he call eggs, Christian sange and toon, and some way of "over the art remode and toon, and some way of the "over the art remode and the same an

country friends.

Sanday afternoon was devoted to a launch picnic, and fishing. The former was particularly for the

ladies and the latter for the men. Well, even the best run affairs fail somewhere—ask Crieff about best run affairs fail somewhere—usa Cricu accu-the fishing!!

The launches were donated by the Urunga Private Launch Owners and it was the owners themselves who were next loath to leave off for the atternoon tea—dahing seemed as bad a disease as Ham Radio. tes—duling seemed as bad a disease as Ham Radio.
Proceedings on Sunday night were held at the
Proceedings on Sunday night were held at the
behalf of Urungs by the President of the Progress
Association. The (compaped), as a small gentler
this gathering and arrived in force. Orieff 2X0,
Prote 3PA and Coll 14X6 responded on behalf of the
Prote 3PA and Coll 14X6 responded on behalf at the
early of the College of the College of the College
early of Mesex. Ben Johnson, Tel Halany and Jack
Cerrard, and allide by 32R mede a night pass of

Gerrard, and slides by JJR mode a night pass only conquisity.

And the property of the property of the property of the three property of the property of the property of the property of the Wireless Institute of Australia, the oldest body which were conceived by two specials, "The Tables Catchers" Award" to Cee Hardman, which caused Coe 18st when Col followed him to receive "The Earl Eaberts award" to the property of the property of the Catchers and the property of the property of the property of the Catchers award" to Cee Hardman, which caused Coe 18st when Col followed him to receive "The Earl Eaberts award" the property of the property of the Earl Eaberts award the property of the property of the property of the San Eaberts award the property of the property of the property of the San Eaberts award the property of th

For Basher's Award.

These came 21M and 21M, two houses pose in cottine, with the audience disappointed that the most pose in cottine, with the audience disappointed that the Monday came; a time for dynature, but as each parting great left the "Do-Mc" Crieft, who core presents and worked in get lighter and lighter, and no traded a great; week soid, a cwell to its organisation of the control of

and Tableland Convention at Urunga next year."

Among those present were: VK2s PA, XO, ASF,
SH, ZS, CI, AJB, DS, WQ, ALB, ARY, LH, KR,
KX, AGD, KN, NY, AGM, JR, WT, WH, ACU, TB,
EA, AWP, DX, SR, AJT, ABJ, JK, YO, ADN,
Messrs. Norm Mody, Norm Hart, C. Gortos, E. Hainey.

Hainey,
Donations were received from the following:—
Builey's Cordial Factory, soft drinks; McWilliam's
Wines, case wines; Rod Pike 2ACU, £1; Len Turner
2,3JB, motor generator; Ted Hainey, bunch bananas;
Martin de Laurnay, pair 8074; Dominion Facton,
£1/1/- open order; Prices Badio, £1/1/- open order;
Wireless Institute of Australia, valves and maps. Results of the competitions.—Morse recording: st. 2JR, motor generator; 2nd, 2ZS, pair 807s; st. 2AGM 897. Voices: lat, 2AJB, pair 897s; Boulta of the competition—More recentles, and the competition—More recentles, and AdM 807 volces int. 24th pair 8074; 25th pai simple magnetic and dielectric fields set up around a d.c. circuit were first shown. The development and radiation of electromagnetic wave followed when the circuit was excited from a high frequency source. The film then showed the propagation of waves in space, distinguishing between ground wave propagation and propagation by reflection from the

ionosphere. The second film was titled "Radio Antenna Pun-damentaia." It showed diagrammatically by means waves on antenna and trasmission lines, and the production of standing waves followed. Methods of eleding automate with different types of trasmission ductance or capacitance on the electrical length of the antenna shown. The film showed examples of fixed and trailing aircraft antennae.

fixed and trailing aircraft astenues.
The third fine dish with "Atomic Deepy."
The third fine dish with "Atomic Deepy."
The third fine dish was present as the consider of the control of accompanied by the radiation of energy. Atomic energy could be produced by nuclear synthesis, whereby the nuclei of a light element were joined together to produce a heavier one, or by the better known process of nuclear fission whereby the nucleus known process of nuclear fission whereby the nucleus of a heavy element was split up to produce nuclei of a lighter element. It was shown how nuclear fission could set up a chain reaction which is used in the atomic bomb. SCREENING OF FILMS

The Victorian Division has arranged for the screening of films of general interest at the Radio School on the following nights: Friday, 16th June; Friday, 8th July; Friday, 7th September. Members and friends are invited to attend, and further information may be obtained by ringing the Secretary at FJ 6997.

EASTERN ZONE PORTABLE CONTEST

EASTERN 20TABLE CONTEST
The most synthe contest, held the last weekend in April, proved an inqualified success, and we end and april, proved an inqualified success, and we take the contest. The contest was a successive and a taking an interested and active part in the contest. We believe that one station, \$KS, came on phone for the first time when also gave the boys points of the zone. The results of the contest have not been amonomed at time of writing.

been announced at time of verifing.
The stations counting under possible conditions.
The stations constrain under possible conditions.
Di, and Mi. The fixed once stations were Visit of the possible conditions.
The possible condition of the possible conditions and only one group had any complaints. 383 and only one possible condition of the burge Palme of the enabled and the possible condition of the super Palme of the enabled arrived with a fault in the receiver setting, which seems that the possible condition of the super Palme of the possible condition day, so Keith did not fix the tent very securely. In the wee small hours he was awakened by the wind and had to fumble around tying the tent to the stretchers which supported the slumbering forms of David and Ted, who slept soundly all night, even though the tent was rocking the stretchers! Howof David and Ted, who slept soundly all night, even though the tent was rocking the stetchers! However, part from sundry tingles from the mile, all was ready to the steep the state of the

Still the truck would not start, and when all Still the track would not start, and when all hope of getting home that night had almost vanuabled, the only truck in the district appeared, and towed them back to civilisation, which proved a nightimare trip round hundreds of hairpin bends in a cloud of dust raised by the 3-tomer, and in the falling light from the headlamps. However, they reached home safely, which was the man thing. they reacted home safety, which was the main thing.

IIV has been in his last hook up as a member

IIV has been in his last hook up as a member

We wish you luck, len, and don't forget that you
are an honour; beenhor of the some. 3PE has had
guys, and plans to put up new poles where the

cuttle cart (go. 3DI is now operating on 20 ms.

cuttle cart (go. 3DI is now operating on 20 ms.

cuttle cart (go. 3DI is now plant in the properties of the

superation of the properties of the properties of the

superation of the properties of the properties of the

superation of the properties of the properties of the

superation of the properties of the properties of the

superation of the properties of the properties of the

superation of the properties of the properties of the

superation of the properties of the properties of the

superation of the properties of the properties of the

superation of the properties of the properties of the properties of the

superation of the properties of the properties of the properties of the

superation of the properties of the properties of the

superation of the properties of the prop a back seat. 3WE is operating from indoors in the hook-ups now that there's snow on them thar hills. What's the lowest temperature so far this seam, Bill? ICI has decided his quad works better has beength shooms to the size by winning the has beength shooms to the size by winning the Propusery Measuring Courtest, Congress, Nert. 202 The Court of the State of the State of the State of the moves into his new home, which is nonly inshed to home, Smithy night, on the frequency of 4560 fc. We trigge those members who have not yet particles. The state of the Gasta of the State of the State of the State of the Gasta of the State of the State of the State of the State of the Gasta of the State of the State of the State of the State of the Gasta of the State of the State

SOUTH WESTERN ZONE

SOUTH WESTERN ZONE.

After Illestings over the bands during the past in liam Radio, 33/a and 2010, can be based on side in liam Radio, 33/a and 2010, can be based on side as 370°a canne of 40°0 and 40°

the Will come down sont Vern and help you can. Looks as if 30 Mb as emerging in conve with a beautiful for the wild in the son more received by the son the wild the son more received by and a ANV will be so more received by a ANV and ANV and a ANV and a street on many monotone unit and Prod has a street on many monotone unit and Prod has refer to a now the son of the son

in VK2 and VK4, getting new ideas, etc. chaps? 3ASV has not been heard on for quite some time now. likewise 3AGD.

now, likewise 3AGD.

Gesteing Amsteur Radio Club.—Two more new
members were welcomed by the members of the
Geolong Amsteur Radio Club. At this meeting one
of the members, it. Brian Lloyd, gave a talk on
of the members, it. Brian Lloyd, gave a talk on
Super Heterodyne Receivers and Double Convenion
Super Receivers." The following meeting, Mr. Peter
Perkins lectured on "Distortion." Mr. Petrkins con-Super Receivers." The tollowing meeting, ar. reter Perkins lectured on "Distortion." Mr. Perkins con-tinually used the blackboard to illustrate his lecture.

tinually used the blackboard to illustrate his lecture.

On Smiday, Ite May, the Club held a hidden
transmitter hunt. As the gang set off to find the
Fring to locate it was SARE and company, followed
closely by SBU. SAPO set off on his pash bike to
did it and finally made it. A princie was then held
find it and finally made it. A princie was then held
hidden, this time it was located first by SALG,
SSY, and SSA, who were together.

NORTH WESTERN ZONE

NORTH WESTERN ZONE

North Western Zone has received a severe setback. SBM, the most active member of the Zone,
and the one to whom Hamis look when they are in
difficulty, has intimated that he has taken on public
active that will severely limit his activities. He
desire that will severely limit his activities. He
seniative and magazine correspondent and his cheerful voice is no longer heard in the Zone hockups. No, he is not giving his gear away. He will have
dust will accomplate, and mothes kirchish and other
dust will accomplate, and mothes kirchish and other dust will accumulate, and moths, silverfish and other wogs will find a home in his trunsmitter.

wogs will find a home in his transmitter.
30E and 3TL are still to be heard every Sonday
morning, some of the others join in occasionally,
the hook-up and often active—for the inch to the hook-up and often active—for the lighting plant. He
has a new diesel engine for he lighting plant. He
has a new diesel engine for he lighting plant. He
has place. STL has rebuilt his t-stage transmitter— one stage at a time. He was having a lot of
suggested to him that the 640 co. was driving
it alily. He merely shifted a plug in the primary
except.

sweetly.

3ZK is still hoping to increase his activities. His trouble is line noise that blots out all but the atrongest signals. 3HR is moderately active. 3AWK has not been heard recently. 3LU has rebuilt his transmitter, rack and panel, 6 feet high.

CENTRAL WESTERN ZONE

Easter time in Stawell is always busy, but when summoves Hams decensived on your series, Easter Standard, off meter 200 and it is werest really came ably supported by VKab Dp. ASW, LP, III, and and yo opheres 3 EP and 3 GN were noted later; George, and you of the standard of the standard of the standard your supply which is running off the 240 ATA power supply which is running off the 240 ATA power supply which is running of the 240 at all. A newcomer to the zoo as ASM, of JEC sham, by this time he should be Wilka and we will be looking for him on the bookup. Easter time in Stawell is always busy, but when

will be looking for him on the book-up.

2III. is print to clean up the verb beam and me printing out a nice phose signal with the crystal measurement of the contract of the control station is 3YW on approx. 7120 Kc.

QUEENSLAND

During April advice was received from WaJLY of San Antonio, Texas, via VK42B, that the former had beard on several Sunday mornings, between band. Station was not identified and he reports that his beam was aimed at VK. It is eignificant that VK4WI operates on 50 Mc. every Sunday morning between the hours mentioned. We await further reports with great interest.

reports with great interest.

A feature of the Sunday morning "get-together" on 7 Mc, is the discussion between country members, VK&WI, and some City members. We would like to see more of the City gang taking part as we feel sure that if the country and the city could meet more often in the discussion of WI.A. matters, it would go a long way towards a better under-

standing.

A display of Ham gear in the hobbies' section of the Red Cross Exhibition during April, was a

TRANSFORMERS, CHOKES, ETC .-

Manufactured to order. Following stock sizes available:

SOLVE YOUR MAINS TROUBLES WITH AN AUTO TRANSFORMER.

T.C.C. AND CHANEX CONDENSERS-

2	uF.	3,00	00 v	olt	worki	ng			£1	12	6	
2	uF.	2,00	00 v	olt	working	ng			1	5	0	
2	uF.	500	volt	w	orking					5	0	
1	uF.	400	volt	w	orking			1		3	0	

POWER TRANSFORMERS. 600 Volts aside, 250 Ma. ... £3 5 0

880 Volts aside, 300 Ma. 4 17 6 1250 Volts aside, 400 Ma. 6 17 6 Tappings taken out where desired.

POWER TRANSFORMERS and CHOKES Re-wound-Reasonable Prices.

VALUES_

RCA 866A Rectifiers £1 5 0 each Sylvania 6L6Gs 15 0 each 1616 Rectifiers 17 6 each 6AC7s 12 6 each

Crystals as illustrated, 40 or 80 metre, AT or BT cut. Accuracy 0.02% of your specified frequency £2/12/6 each 20 metre Zero Drift £5/-/-Large, unmounted, 40 or 80 metre £2/-/-

Special and Commercial Crystals. Prices on application.

CRYSTALS REGROUND £1/-/- each.

BRIGHT STAR CRYSTALS may be obtained from the following Interstate firms:-Messrs. A. E. Harrold, 123 Charlotte St., Brisbane; A. G. Healing Ltd., 151 Pirie St., Adelaide; Atkins (W.A.) Ltd., 894 Hay St., Perth, Lawrence & Hanson Electrical Pty. Ltd., 120 Collins St., Hobart; Collins Radio, 409 Lonsdale St., Melbourne.

A.W.A. SPLIT STATOR TRANSMITTING CONDENSERS, high voltage £2/15/- each. SCREW TYPE NEUTRALISING CONDENSERS (National type) to suit all triode tubes, Polystyrene Insulation 19/6 each.

Prompt delivery on all Country and Interstate orders.

BRIGHT STAR RADIO. K. G. Allen (Late R.A.N.)

1839 LOWER MALVERN ROAD, GLEN IRIS, S.E.6. VICTORIA.

Satisfaction Guaranteed. Phone: UL 5510. huge success. We hope to have a detailed descrip-tion ready for our next issue.

We believe 4HR is getting a new wall ready for the numerous certificates that have been coming his way lately. The most recent of which is a DX C.C. on 28 Me, phone.

The total number of financial members in country zones at the end of April was 73 licenced Hams and 13 Associates.

ZONE NEWS

Tornwills Zee (VK4GD)—This is very low wire more and VK4GD)—This is a very low wire more and the pool week of preparing candidates for the A.O.C.P.—on an average of two new candidates each examination. The the six very soon under the managership of 42D and 43D. The lad we mentioned in our December and 43D the lad we mentioned in our December to attend the A.O.C.P. class. Congruit OMI and here's wishing you every success in that exam. Such

enthusiasm deserves success. A newcomer to the zone is 4EF from Barcaions-(RW uses three folded dipoles of 300 chm ribboo ranged in the form of equilateral triangle, each side ded separately. 4GD is building a beam for 28 Mc. and reports great activity on that band lately. Joke of the month concerns a certain member of this newcomer to the zone is 4EF from Barcaldine. d reports great activity on that band lately. Joke the month concerns a certain member of this ne who painted his car. For some reason the cond coat of paint shrank. The under coat appear-between layers of the top coat, giving the whole "Pied Piper" effect. The disgusted owner soon of his official restored when neighbours come had his spirits restored when neighbours came round to ask Bob for instructions on how they could get a similar "crackle" finish on their own

cars, marked members in the sons are: 4M0, 4GD, 4EF, 4BW, 4GC, 4RW, 44M, 4FC, and MacGate Dr. K. D. Gaston, 5Normaston. Maryborough 2000 (YadGill).——, we Clinb has described by the control of the contr Financial members in the zone are 4GH, 4BG,

4BY, and 4AL 4BY, and 4AL
4BC has a 20 metre beam mounted on the top
of a 35 ft. telephone pole, and doing airight with
the Europeans. 4GH hunting up gate switches for
a new closed-in rig. 4AI working DX on 14 Mey,
the latest being 0RY, VKIADS, and a VK4 operamental varieties of the collect felance. a new closed-in rig. 4AL working DA on 12 away, the latest being ONE, VRLADS, and a VR4 operating portable VR1 in the Gilbert Islands. Mackay Zone (YK4KW),—4FH now uses fixed beam on 14 Mc. and a WSHK on 88 Mc. John has W.A.C. and, all but W.V.E., W.A.S., and DX C.C.

to the course of the course of

No. of the control of

Other financial members are 4RQ, 4ZB, 4EO, 4CL, 4ZL, and 4DO in the Central Zone, and 4FM, 4DC, 4KL, 4HK, 4AX, and Associates A. L. Porter and P. K. Briceson in the Tableland Zone. In New Guinea we have two members, V&OKO and VX9BI.

SOUTH AUSTRALIA

The two monthly general needing was held to adopted the monthly general needing was held to adopt the general speaker was Mr. Clem Tillbrook (JGL). The subject be chose was "astoma construction" has subject be chose was "astoma construction" by the control of t the gaug at "smoke-oh," the favourable reaction to the lecture was particularly noticeable. Its suc-cess lay, I think, in the fact that Clem did not every as a handlus of formulae and mathematical few particularly and the success of the control of the but showed us just what he had done in practice, and the results he had achieved. Some of the technical "supper cruse" might have filinched a little when he spoke about giving the iron man' a beit technical "upper crust" might have flinched a little when he spoke about giving the iron mast "a beit with an axe," but that was the language the ordin-ary Amateur understood. Good work Glem. Among the visitors present were 5BC, SRD, GSCXQ, OKL, SUX (a fellow journalist), SRC, and Meser. E. Murray, G. Read, B. Mildren, and J. Gates, To gentlemen we say welcome, and come again next time you are in town.

It was moved by 5YF and seconded by my spa ring partner 53D, that a copy of the theoretical paper of the last A.O.C.P. exam be submitted to a member of the Technical Committee and the theoretical instructor (5UL) with a view to report member of the Technical Committee and the Membershie interactive (11) when we're properly the control of the co

you when!? It was good to see GBC at the meeting. Being at Renmark he does not see much of the boys these days, except on annual holidays. He is giving the w.h.f. a go these days, assisted by his partner in crime 584, who is with him at the second best broadcasting station in VKS. (You don't know who that is? Remind me to tell you some day).

"Deadeye Dick," I'm sorry, I mean 5TL apparently wields a wicked .303 rife, if being top scorer for the Postal Institute Rife Club means anything. His name in all the local papers, and scorer for the Postal Institute Rifle Usu means anything. His name in all the local papers, and over the air too. The "Postie" always gets his man. Heard that JGG gave SXO and SXQ a hand to pull down their beams the other day. A labour of love Lettil? JZN was seen producing sine waves from Lettlif 3PN was seen producing sine waves from his molec bus the other day, or were you just the ing to find a place to park Les! Who was the egg (addled) who hetrodyned 5VI on a recent Sunday all the man and the seen and the seen and the seen and Other, and these keep going for nearly all the time the breakcost from the W.I.A. was on in Y85?

the breadest from the W.I.A. was on in YKS? I could be wrong, but I thought I detected a slight note of disappointment in the voices of our enee in YKS. The subject of the magazine again came up for discussion at the general meeting of formation had been given by our delegizet, it was decided that we, in YKS, could stand another Percentily, I can't see where all this continued discussion grid us. The magazine is a necessity, that the present of the present of the control of the present of the seed of the present of the present of the seed of the present of the present of the seed of the present of the creases in price or we go broke. It's up to the Magazine Committee to trim it down to a payable proposition, or go out of bosiness. That collossal debit in the VK3 balance sheet of 126 pounds against the Magazine still sticks in my tonsils. Servy to hear that 1900 has regimed from the MALL to remove from the form that the club have? Bossons around Adviside seem to lis-celled the Part Bossons around Adviside seem to lis-celled the MALL again. Nothing editing to hind, but I hope it is true Jack. 200 was a to hind, but I hope it is true Jack. 200 was a to hind, but I hope it is true Jack. 200 was a to hind, but I hope it is true Jack. 200 was a to hind, but I have a seem to have a seem to have been been been as the seems decidedly uncomplimentary remarks regarding any decidedly uncomplimentary remarks and has seems decidedly uncomplimentary remarks and has seen decided to the property of the property o

Value and the therefore that is the house remnessed to the present of the barrier with remneral results of the remneral remneral results of the remner

again. How do you like that Clirrief Congratualizate go out to \$TR\$ upon his appelarment to a real top flight job with the Federal Government in Works and Housing. You will some be able to make a good ong of ten now Rajha, look to the state of the stat

on the says of the a loosty little perionia and hally despects with the contract of the contract of the contract of the states would be large approaches the same and not what it then bells, try some Presch Co. and and and modelning or OK. so It would be long and the contract of the contra goes too. Ded you eventually wake of who I was to Combe the Assach Debt must be his metassed to be the property of the Combe the Assach Debt must be his metassed to be the property of the Combe that th

so we might have that QSO yet. It release also placed of most, but I believe that a very said sense of disastifaction is permenting the raths of some of disastifaction is permenting the raths of both the control of the control of the control of the neutron of the control of the control of the neutron of the control of the control of the said part of the control of the control of the most of the control of the control of the most of the control of the control of the said control of the control of the control of the post of the control of the control of the control of the go to it, and if I can be of any help don't best and control of the contro go to it, and if I can be of any help don't heritate to dig me up. However, for the love of mile make to dig me up. However, for the hove of mile make being used up by somebody for their own purpose. Also, don't forget that no nantier what the rules any one of you getting up on the floor of the meeting and discussing your getrauaces for as long as the property of the control of the control of the property of the control of the control of the control in when," and we have a superior of the control of the him when," and the control of the control of the control of the him when," and the control of the control of the control of the him when," and the control of the control of the control of the him when," and the control of the control of the control of the control of the him when, "I have superior of the control of the co

"Amateur Radio," June, 1949

WESTERN AUSTRALIA

The April meeting was held on the 19th—Easter Tuesday, a holiday for many Hams. Nevertheless the attendance was good at 30. Our President 6 WII was away, so 6 KW took the chair for the evening. wa may, no faW took the chair for the evening. In the cereproduces, natural has been given in the cereproduces, and the base of given in the cereproduces of the cereproduces. The cereproduces was to be compared to the cereproduces of the cereproduces which is considered to the cereproduces when the cereproduces were considered to the cereproduces of the cereproduces with the cereproduces of the cereproduces with th

occurs an annual resurre. senemember the ant ower GNW is doing a good job in re-building 6WI, and hopes to have it on the air by May, running 50 wats input on 1196 Ko. John is making an him has been recorded. and a vote of thanks to him has been recorded. 6WII, spoted '9SI' for the suggested rules to belsered by DX merchants. An extract will be never the summary of the summary o

enjoyable for both the hounds and the fox.

After the "inferval," 6AG gave us a ten minute
chat and demonstration on a piece of World War
I equipment. An alternator used in aircraft to
provide m.c.w. supply to a transmitter, 6AG recently had it rewound (during the enforced blackout) so as to keep his batteries charged. out) eo as to keep his batteries charged.

Gil fellowed up with an imprement salk about single side-hand suppressed currier communications. more allowed to the control of the control of

PERSONALITIES

The star attraction this most see YK. Except of the Star attraction this most see the YK. Except of the Star attraction the star attraction to the basis with their portable gear. Undertunately encouraging, 6MY put up a fazey antenna in some encouraging, 6MY put up a fazey antenna in some encouraging, 6MY put up a fazey antenna in some encouraging, 6MY put up a fazey antenna in some encouraging, 6MY put up a fazey antenna in some encouraging, 6MY put up a fazey and the notified the plate of the star attraction of the star a collater the had then the knock. We believe Marst for a long surface year. Backbod Hill and worked everything in spike—and that means plenty. So that the second surface is the second surface in the

boys just didn't appear to be around that day.

GMU on the air for the occasion had some nice
GMU on the air for the occasion had some nice
while, but you didn't stay long enough Prank.

WW from Albany had a nice ov. signal up this
while, but you didn't stay long enough Prank.

GM make a whole stay of the stay of the
late make a whole stay of "farty" contract.

GM make a whole stay of "farty" contract
are nice of the stay of the stay of the stay of the
really enjoyed his first day on the six GYZ and

CM represented Carryls in the contact. GYZ batted

the distance. 6YM was trying out his new 90 wattegnal, think he must be satisfied by the reports he was getting.

signal, think he must be satisfied by the reports be wan getting. So were presented by the reports be wanged by the present of the present of the context. O'MH put in a nice signal from Bouloer, we believe 61% was on somewhere, but ddin't have him of DF gave the game sway when an electric context. Fred made a valiant effort to make up time after the QBM ceased. But were the QBM ceased, and wanted little time in working he contacts. Holl was on for a while as was 671, but on the whole it was a good day and the operating armshrf was quite high.

and the operating standard was quite high.

6N gave Hum Radio away on Easter Tuesday
and went to work, but the doors wouldn't open—
wit as a boliday! We also bear from Kalamunda
with the control of the control of the control
his shoulder. Nothing funny about that, but when
funck found that he couldn't get down again, we
just had to smile. 6AS amassed us all the other
cerning by working a FY. "The beam here is a

3-element job about two feet high, on a couple of Web and the property of the but Dick is doing an extensive radio course, so there are bigger and better signals to come from SFA shortly

TASMANIA

TASMANIA

My notes this near the work of the bags of some existent notes which were not and the bags of some existent notes which were not and the bags of some existent notes which were not and the source of the of his burrow at last."

Rupe's theory about this amazing phenomenon
is that the wire is no thin, the signals can't stay
on it and must go somewhere, beare the DA. Now
complain that his "mojelation" is down—tit's only
the wire acting as a sideband filter. Incidently, I
want to put up a long wire, so if anyone knows
where I can get a Ford spark coil I'd be very grateful

grateful. This based is not of stamping ground and it and TJB in based on the first stamping ground as the should I lie only lives about 400 yards away from m. TAA is rebuilding his rig and according to the control of the control o

NORTHERN ZONE

Were 1 to write about the activities of our various was to be considered to the considered of the considered to the cons

VE2QL, in his lass contribute to his column. Other States should contribute to his column. TRK takes this suggestion one step further. Bay contribute that a publication are could well follow their example. This would mean taking 2QL's notice out of the VRz column and putting it on a Federal basis, however with some help from the DX galaging the contribute of the CR of the C basis, however with some help from the DX gains it should be possible to put on a good show with mutual benefit to all concerned. (I hope to be to be all concerned, the put of the con-St. that often been said that many stations do not SK. these days. Whilst listening for the DX to break through, I filled in the time checking my cards. Of the countries worked here, 81 per cent. have QSLed. A better average than I expected.

CORRESPONDENCE AN OPEN LETTER TO AMATEUR STATION VK2JP

Isar OM.

The gang here in VK6 have a very high appreciation of your provess in nating the clusiwe DX stations which frequent the 10 netter band at times, and the control of the control Dear OM,

carrying on like the proprietor of the 20 metre band, instead of a shareholder, the poor elusive DX becomes more and more elusive under the perfect "dogspile" of your creation. Now what about it "dogpile" of your creation. Now what about it OM, you sound a good scout, what about sliding out from on top after you have finished your QSO and leave the rest of Australia to fend for them and leave the rest of Australia to fend for themselves. After all, you sound like an old hen clucking her chickens around her, and nine times out of ten the chickens don't want to be gathered in and the chickens don't want to be gathered in and the chickens around the chickens of the c

Sincerely your,
Sincerely your,
Practically all of VK5,"

"Practically all of VK5,"

per WARWICK W. PARSONS (5PS),

(the doer of dirty work for VK5).

FOR SALE, EXCHANGE, AND WANTED

9d. per line, minimum 2/-. Copy must be received by 8th of the

month, and remittance must accompany advertisement. Calculation of cost is based on an average of six words a line.

FOR SALE .- A.W.A. 12 v.-275 v.-500 v. Rotary Transformer. Perfect A. R. Wathen, Box 29, Casterton.

FOR SALE.—Complete Ham Station incl. 100 w. phone-c.w. tx., commercial appearance, all stages metered, push button oper., may be remotely control-led, class B 809s, modulate class C 813, 4 stages mic. preamp. from a D104. Modified AR7 rx with KS9er and 3" c.r.o., mod. checker, and much other equipt. for best offer. Ring WM 4362.

FOR SALE.—Moving Coil Mike, splendid English make, new, £7; modulator, 6C6, 6C6, 6A6 Class B, £4; 100 Kc. standard crystal in holder £2/15/(with certificate); 0-5.0 Ma. d.c. meters 15/-; Weston 0-250 Ma. £1/10/-; 7193s 6/6; 834s 25/-; SCR522 less 832s £10/10/-; Gammatron 24 £1. K. Mc-Taggart, 4 Kenilworth Grove, Glen Iris, S.E.6, UY 6256 evening.

FOR SALE.—One 10 Valve Marconi R1155 Communication Receiver, a.c. filter, S meter, tuning indicator, b.f.o., stand-by, 5 bands, 75 Kc.-18.5 Mc., very fine vernier, aerial switching, with speaker and p.p. output. Apply G. Laver, Fish Creek, Vic., Phone: 10U.

FOR SALE.—SCR522 transmitter section only, complete with 6G6, 6V6, two 832s, crystal and 4 meters, been on air, reasonable offer accepted. E. C. Wheller, 2a Fawkner Park, South Yarra.

FOR SALE.—Transmitting condensers, meters, transformers, relays, mikes, 455 Kc. crystal, large number of various components. Ring or call; I probably have what you want. G. H. Choules, 20 Donald St., East Malvern, WM 6854,

evenings or week-ends. SELL: Good English 11 Valve Communication Receiver, 11-200 metres, also almost new Crosley Transceiver. Both less valves. What offers? Mustard.

Union, Sydney University. SELL OR EXCHANGE,-Class "C" Wavemeter; Pair new 801s; Type A Mk. III.; Collins sealed 200 Kc. crystal. Ayre, 65 Kenmare St., E.12, Vic.



TRANSFORMERS OF DISTINCTION

LINE INPUT TRANSFORMERS (LOW LEVEL)
The items listed in this section are wide range low level
audio transformers for low level input, output and mixing systems,
etc. Coil structures are balanced semi-toroid types with multi-
shields and windings for minimum hum pick-up. Core materials
are high permeability Telcon alloys.
In all cases, the higher of the two line impedances given
are centre-tapped and balanced inductively and capacitively. The
lower impedance is obtained by parallel connections, in which
case the centre tap is not available.

ITEM 82. TYPE No. AMI Mounting: R9 Reversible

| TYPE NO. ANALY | TYPE

LINE OUTPUT TRANSFORMERS (LOW LEVEL)

TYPE No. AR5

TYPE No. AR7

INTER-VALVE TRANSFORMERS

INTER-VALVE TRANSPURSERS
The item in this section, with the exception of item 90 are high quality inter-waves coupling transformers. Coil structures designed for industry and capacitive balance within one per cent. Core materials are high permeability Tation alloys imported the form of asserting the permeability Tation alloys imported the form of asserting the permeability to the permeability that is a second to th

ITEM 87. TYPE No. AM3 | Primary Z. 10,000 clms | Primary Z. 10,000 clms | Single Medium impedance triode Secondary Z. 90,000 clms | Span Single or p.p. Gride Primary Z. 10,000 clms | Primary Z.

RED LINE EQUIPMENT PTY. LTD.

TRANSFORMER ENGINEERS WORKSHOP: CITY OFFICE: MU 6895 (3 lines). 157 Elizabeth St., Central 4773. 2 Coates Lane,

Melhourne

Keep this Catalogue. Cut

out and file for reference.

ITEM 88. TYPE No. AM2

ITEM 89 TYPE No. AR3

PERM CO. TYPE No. RA3

DRIVER TRANSFORMER (CLASS A-AB-B) TYPE No. ARI

| Secondary Z; 20,000 olums CT | Dp. Med. Imp. Triodes | Ratic: 1:1 | Whole Primary to whole Secondary Coupling Direct | Max. Umbal. DG 3 Max. Pripose | Case A; Ep. 1 | Pripose |

ITEM 92. TYPE No. AR2 | TTEM 92, | TAPE NO. ARK | Primary 2; 20,000 ohms | p.p. Med. Imp. Triebes | Secondary 2; 30,000 ohms CT | p.p. Delta | p

TYPE No. AS2
 Primary Z: 10,000 olums
 Single 6V6 Triode

 Secondary Z: 5,000 olums CT
 p.p. Grids

 Ratio: 2,83:1
 Whole Primary to Half Secondary

 Coupling: Direct
 Max. unbal. DC 40 Ma.

 Purpose
 Class AB2 Drives

| TYPE No. D19 | Primary Zi, 19,000 alms | Primary Zi, 19,000 alms | Primary Zi, 24 db Secondary Zi, 19,5, 19 Grids | Primary 1,6,100 | Pr

OUEDNIAND:

VICTORIA.
A. E. Hardel
B. Martin
Arthur J. Valil Pty, Ltd.
Arthur J. Valil Pty, Ltd.
A. G. Haeling Pty, Ltd.
J. Michaelmore & Co.
J. Michaelmore Motor Spares Ltd.

Lewrence & Hanson Electrical Grard & Goodman.

Lewrence & Hanson Electrical Grard & Goodman.

Warbourton Franki (Mel.) Ltd.

Warbourton Franki (Mel.) Ltd.

And all leading wholesalers.

NEW SOUTH WALES:

NEW SOUTH WALES:

NOYES Bros. (Aug.) A. (Au

Noyes Bros. (Aust.) Pty. Ltd. Lawrence & Hanson Electrical United Radio Distributors Pty. Ltd. Pty. Ltd.

iii.

A GUARANTEE OF DEPENDABILITY

MAGRATHS HAVE THEM..



The directly calibrated, illuminated dial gives quick and easy frequency reading on all six ranges.

"ADVANCE" SIGNAL GENERATORS

TYPE "E"

The outstanding feature of the new Type "E" Signal Generator is its exceptionally wide range covering all frequencies from 100 Kc. to 60 Mc. of FUNDAMENTALS. By using the second harmonic on Range A, this range is extended

from 60 Mc. to 120 Mc.

The problem of poor attenuation, especially at frequencies above 10 Mc., has been overcome by the design of a properly shielded constant impedance 75 ohms ladder network whose output is taken to a matched transmission line.

To dispense with an expensive monitoring system, a Transitron R.F. Oscillator circuit is used, designed for high stability and giving the necessary constant output level to feed the 75 ohms attenuator system.

Careful attention to shielding and filtering of the power supply has reduced leakage and stray fields to 3 microvolts at 60 megacycles.

SPECIFICATIONS:

FREQUENCY RANGE .- 100 Kc. to 60 Mc. in six ranges, calibration accuracy ± 1%. By using the second harmonic of Range A the

frequency range is extended from 60-120 Mc. Also on this range, the British television sound and vision frequencies are marked.

OUTPUT VOLTAGE.—Obtained from the end of a 75 ohm matched transmission line. Output continuously variable from 1 microvolt to 100 millivolts.

OUTPUT IMPEDANCE.—When transmission line unterminated, 75 ohms. When terminated, three values are obtainable: 37 ohms, 10 ohms, or 10 ohms through a standard all-wave dummy aerial. 1 VOLT SOCKET .- A steady output of approxi-

mately 1 volt is available at this socket. Output impedance is about 50 ohms.

INTERNAL MODULATION .- 30% at 400 c.p.s.

A.F. OUTPUT.—Variable from 0-5 volts max. approximately. The output impedance is 50,000 ohms at maximum output.

R.F. LEAKAGE.—Oscillator section well shielded and external fields negligible (less than 3 microwolte)

ACCESSORIES -

- 1 EF50 Valve, Mullard or Sylvania 1 6J5G Valve 1 6X5G Valve
- 1 Pilot Lamp, Type MES 11 mm. 6.5 volt. 1 Termination Pad and Dummy Aerial, Type
- 1 Shielded A.F. lead, complete with plug and crocodile clips, Type P.L.22.
- POWER SUPPLY .- 100-210-230-250 volts 40-100 c.p.s., consumption approximately 15 watts.
- DIMENSIONS.-13" x 101 x 71 deep overall. WEIGHT .- 15 lbs. nett.

FINISH.-Housed in attractive steel case, panel and case being sprayed durable cream enamel, leather carrying handle fitted.

.H.MAGRATHEC?

208 Lonsdale Street, Melbourne,

Phone: Central 3688-4414
